

TOSHIBA

FILE NO. 330-200311

SERVICE MANUAL

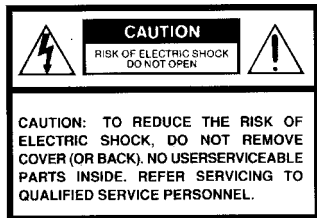
DLP PROJECTOR ***TDP-P6***



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SAFETY PRECAUTIONS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDETHE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIRED PERSONNEL ONLY.

CAUTION: Laser beam is emitted when the laser button of the remote control is pressed. Do not look from the front of the remote control. Do not face toward a person or to a mirror.

FCC Radio Frequency Interference Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING: Changes or modifications made to this equipment, not expressly approved by Toshiba, or parties authorized by Toshiba, could void the user's authority to operate the equipment.

Notice: This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

IMPORTANT PRECAUTIONS

Save Original Packing Materials

The original shipping carton and packing materials will come in handy if you ever have to ship your LCD projector. For maximum protection, repack the set as it was originally packed at the factory.

Avoid Volatile Liquid

Do not use volatile liquids, such as an insect spray, near the unit. Do not leave rubber or plastic products touching the unit for a long time. They will mar the finish.

Moisture Condensation

Never operate this unit immediately after moving it from a cold location to a warm location. When the unit is exposed to such a change in temperature, moisture may condense on the crucial internal parts. To prevent the unit from possible damage, do not use the unit for at least 2 hours when there is an extreme or sudden change in temperature.

In the spaces provided below, record the Model and Serial No. located at the rear of your LCD projector.

Mode No. _____ Serial No. _____

Retain this information for future reference.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION: PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS GIVEN IN THIS OWNER'S MANUAL AND THOSE MARKED ON THE UNIT. RETAIN THIS BOOKLET FOR FUTURE REFERENCE.

This set has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use and servicing. This unit is fully transistorized and does not contain any parts that can be repaired by the user.

DO NOT REMOVE THE CABINET COVER, OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

1. Read Owner's Manual

After unpacking this product, read the owner's manual carefully, and follow all the operating and other instructions.



2. Power Sources

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

For products intended to operate from battery power, or other sources, refer to the operating instructions.



3. Source of Light

Do not look into the lens while the lamp is on. The strong light from the lamp may cause damage to your eyes or sight.



4. Ventilation

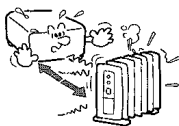
Openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.



IMPORTANT SAFETY INSTRUCTIONS

5. Heat

The product should be situated away from heat sources such as radiators heat registers, stoves, or other products (including amplifiers) that produce heat.



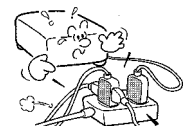
7. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.



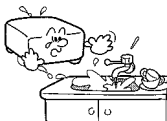
9. Overloading

Do not overload wall outlets; extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.



6. Water and Moisture

Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool and the like.



8. Power-Cord Protection

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.



10. Lightning

For added protection for this product during storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet.

This will prevent damage to the product due to lightning and power-line surges.



Troubleshooting

You use the Troubleshooting section to diagnose problems with the projector. In this section, you will find troubleshooting flowcharts for a variety of symptoms. Each flowchart leads you through a series of steps that will ultimately result in a solution. The solutions begin with the most simple and progress to the most complex.

Go to the section you want.

Power problems, including lamp issues, partial power up, shutdown and no power (page 6)

Image problems, including no image, bad color, dim image and other picture distortions (page 18)

Keypad problems (page 21)

Remote problems (page 22)

Audio problems (page 23)

In addition to the troubleshooting trees, you will also find a **controller voltage diagram** (page 25)

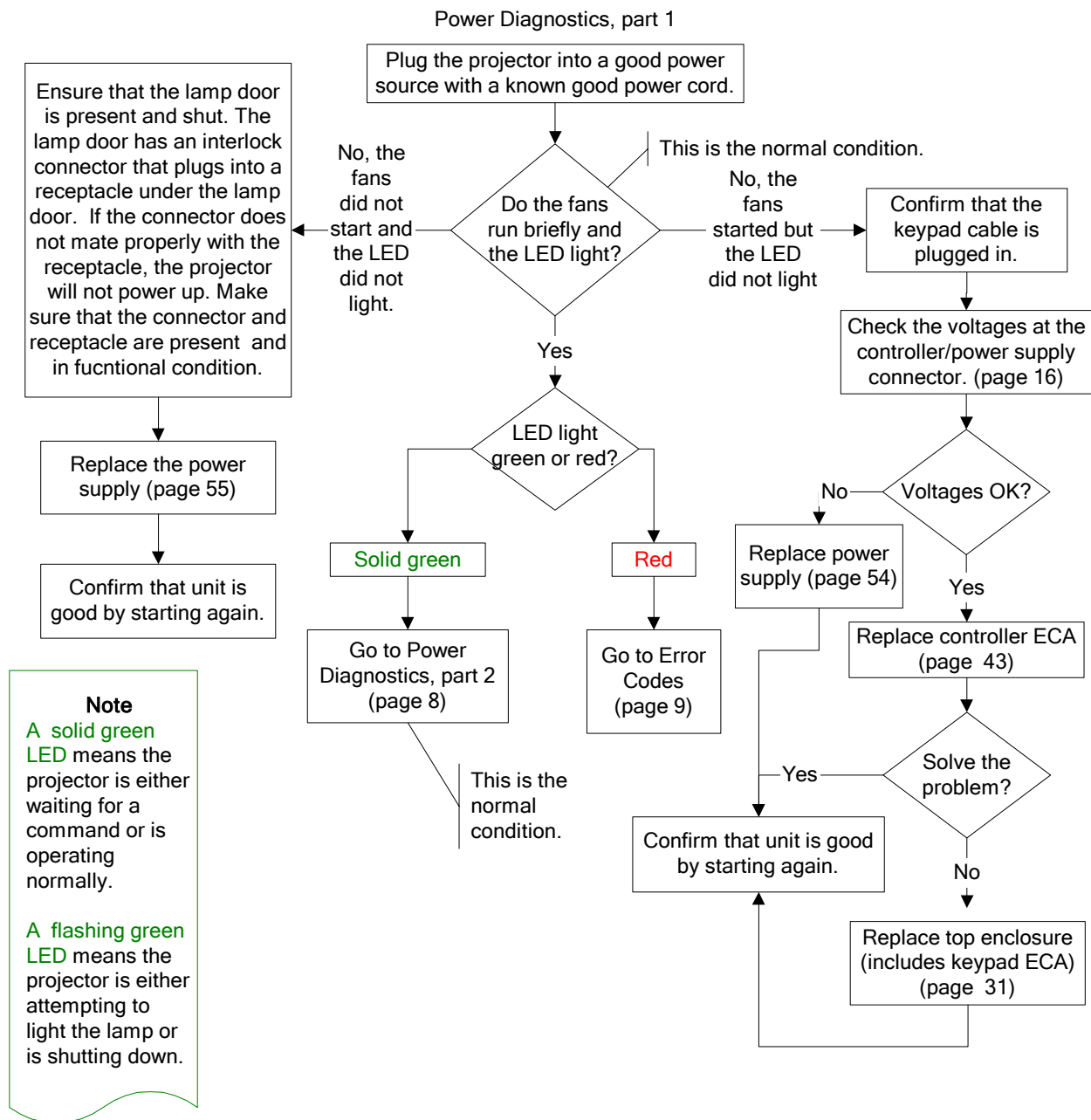
Power Problems

Troubleshooting TDP-P6 power problems is different from prior Toshiba projectors. The TDP-P6 communicates its status via an LED and an LCD located on the keypad. When this status LED is green, you know that the projector is working properly. When the status LED is solid red or flashing red, you know there are lamp, power or startup problems. The frequency with which the status indicator blinks red indicates one of several error codes. These error codes provide crucial information about projector malfunctions. The LCD panel provides text messages related to both status and error messages.

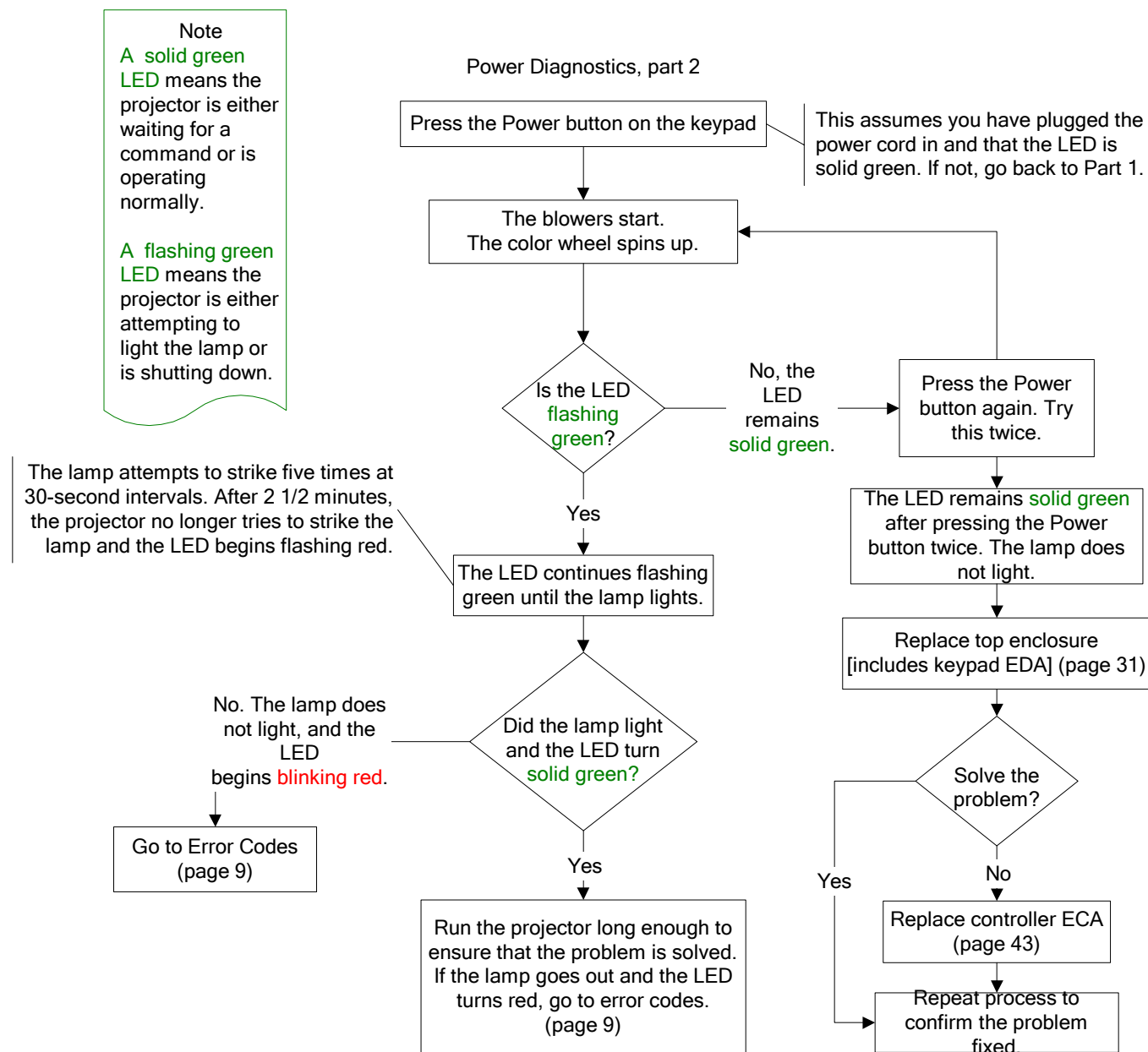
Below is a table that shows the meaning the various LED states.

NOTE We **strongly** suggest that you follow the entire power diagnosis sequence (Power Diagnostics, Part 1 on the left).

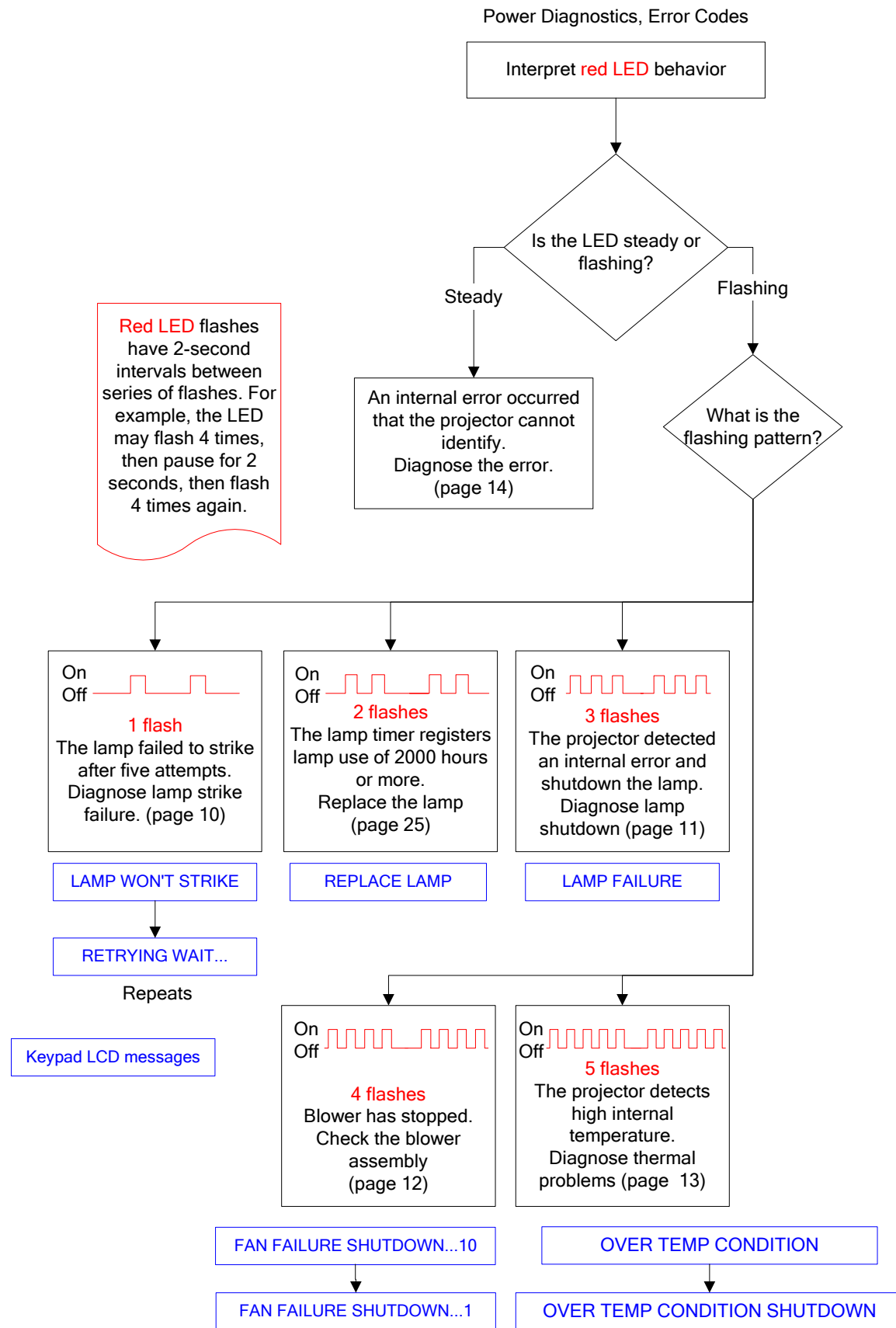
| LED Status | |
|-----------------------------|--|
| LED flashes green | The projector is starting up after the Power button was pressed, or the projector is shutting down after the Power button was pressed. |
| LED is solid green | The projector is ready to light the lamp when the Power button is pressed. Or the lamp is lit and the projector is operating properly. |
| LED flashes red once | The lamp will not strike after five tries (2 1/2 minutes). |
| LED flashes red two times | The lamp has more than 2,000 hours of use. Requires replacement. Projector shuts down. |
| LED flashes red three times | Lamp failure. Projector shuts down. |
| LED flashes red four times | One or more fans not operating. Projector shuts down. |
| LED flashes red five times | High temperature condition. Projector shuts down. |
| LED is solid red | Undiagnosed error. Projector shuts down |



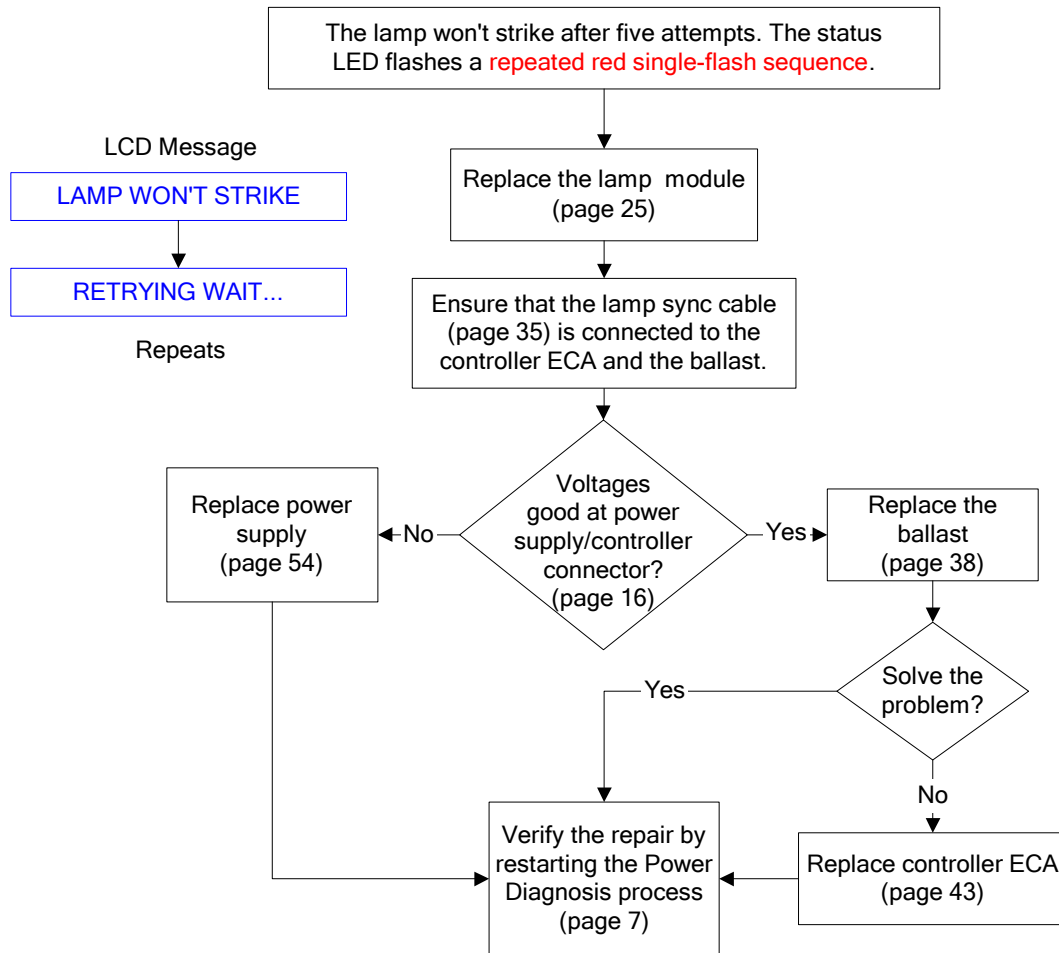
Power Diagnostics, Part 2



Error Codes



LED flashes repeated red single-flash sequence



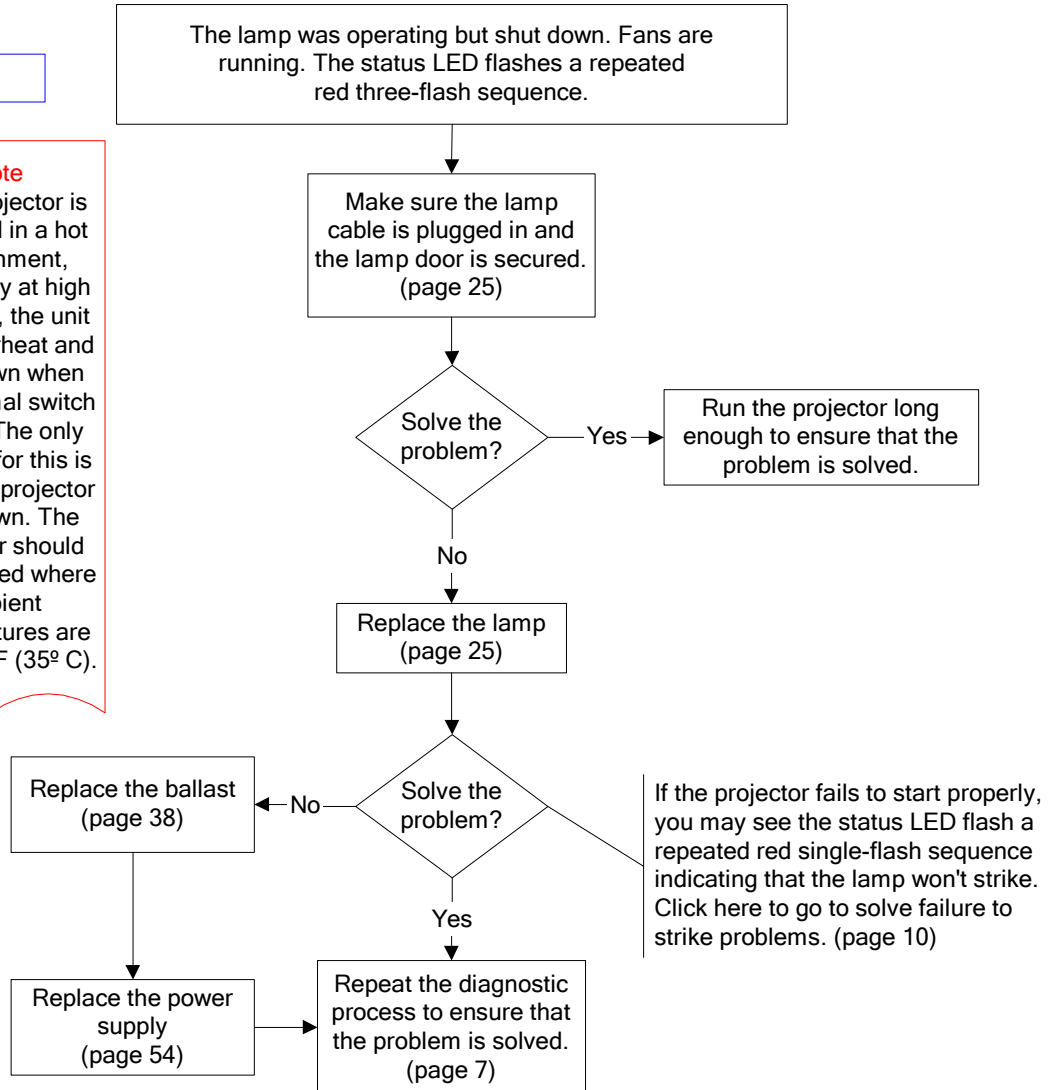
LED flashes repeated red three-flash sequence

LCD Message

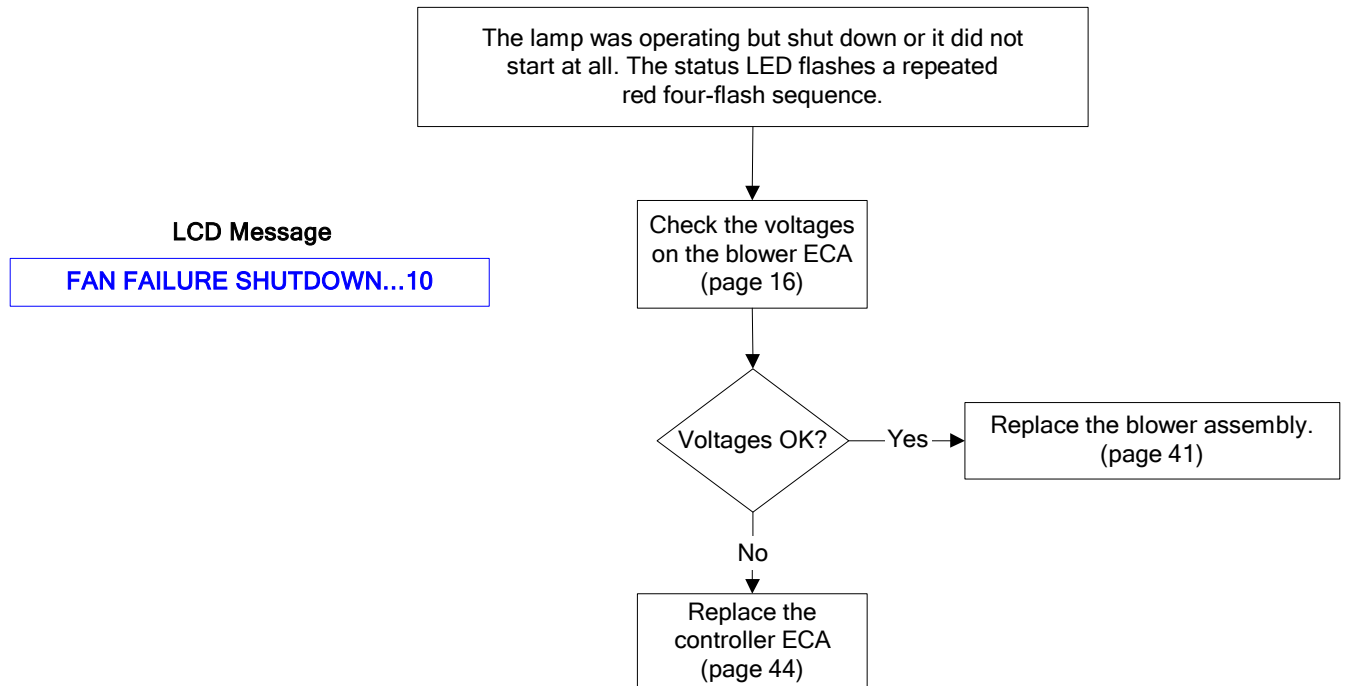
LAMP FAILURE

Note

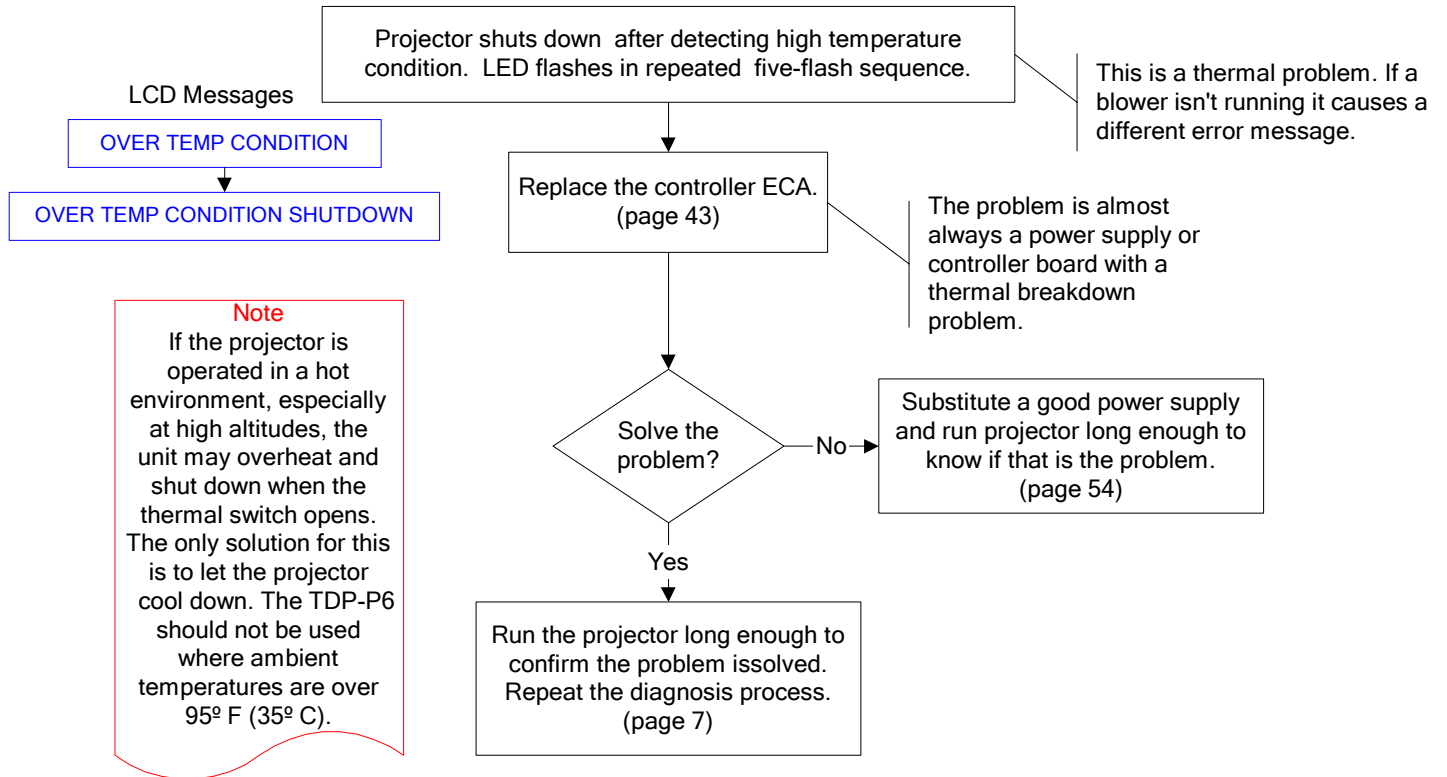
If the projector is operated in a hot environment, especially at high altitudes, the unit may overheat and shut down when the thermal switch opens. The only solution for this is to let the projector cool down. The projector should not be used where ambient temperatures are over 95° F (35° C).



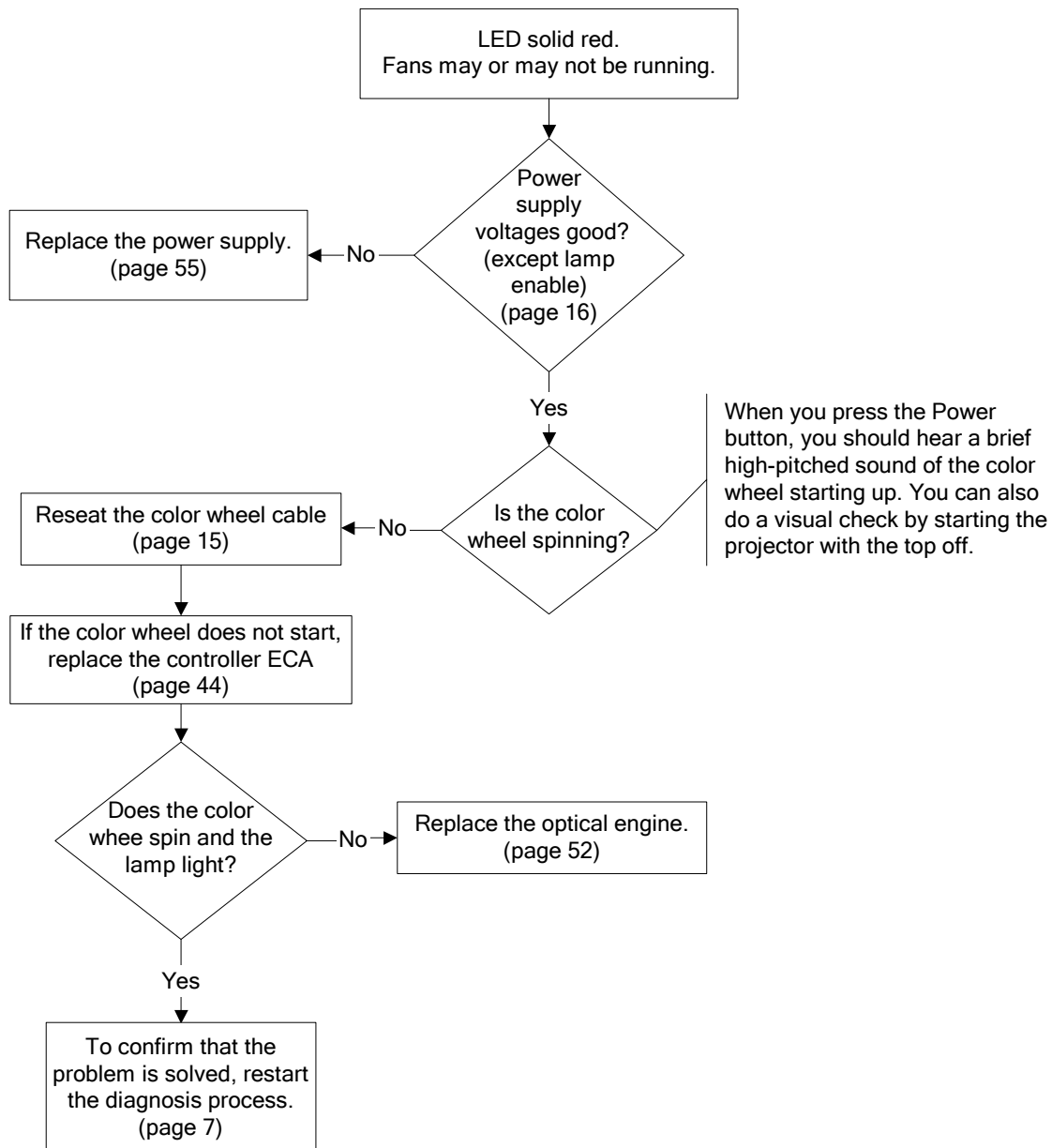
LED flashes repeated four-flash sequence



LED flashes repeated red five-flash sequence



LED is solid red



Check the color wheel cable

If the color wheel cable is not properly seated in its ZIF connector, the color wheel will not start when the Power button is pressed. When the color wheel does not spin, there is no lamp enable signal, and the lamp will not strike.

Normally, you hear the brief high-pitched sound when the color wheel spins up to speed. If you don't hear the sound, or if you are not sure, you can do a visual check to confirm the color wheel operation.

If the color wheel is not spinning, the first item to check is the color wheel cable connection, and then reseal it if necessary.

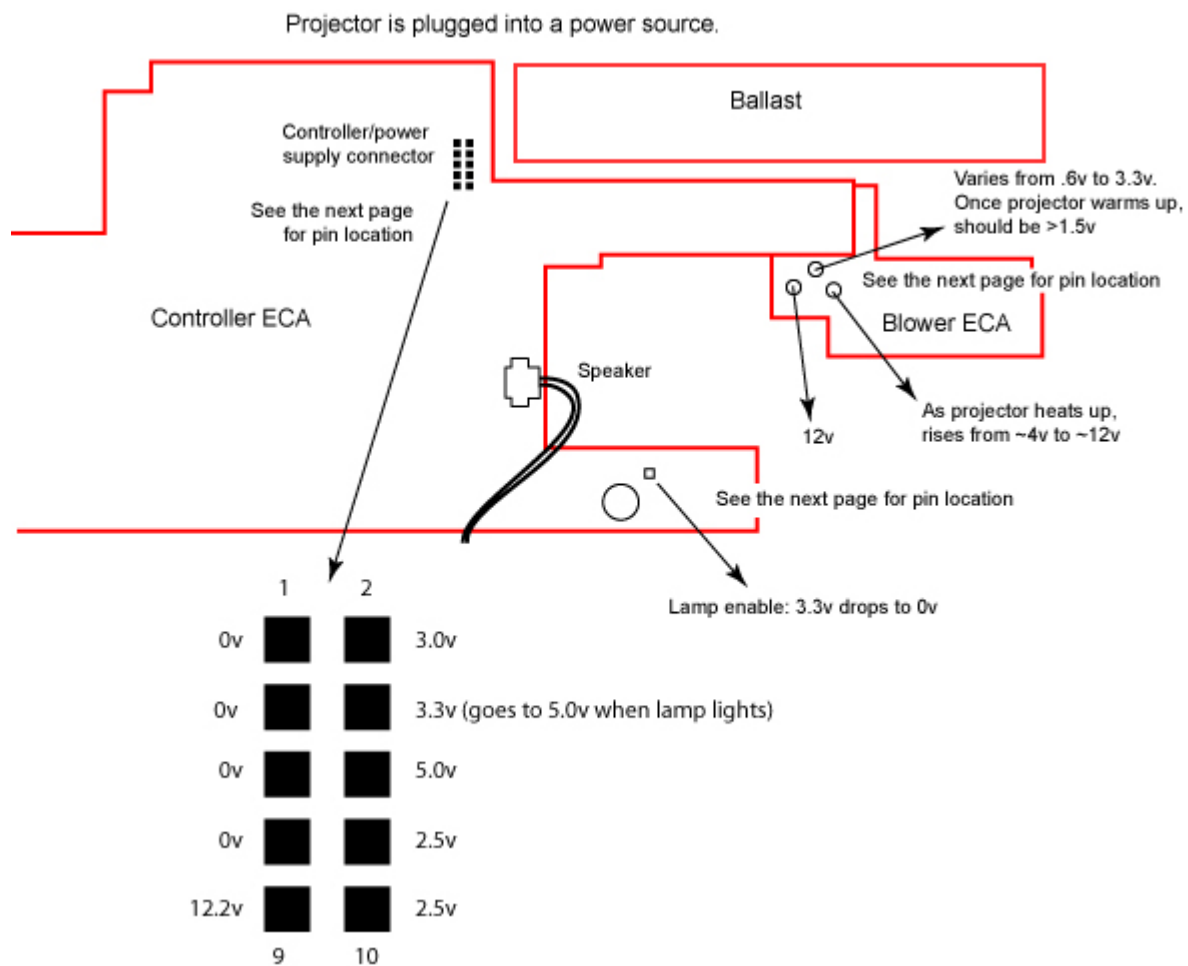
To check color wheel operation and reseal the cable, do the following:

- 1 Power up the projector with the top off.

NOTE The lamp and the lamp door must be in place to start the projector with the top case removed.

- 2 Examine the color wheel to see if it is spinning. The color wheel is inside the circular shroud on the optical engine.
- 3 If the color wheel is not spinning, check and reseal the color wheel cable connection.
- 4 To reseal the cable, open the ZIF connector, and pull the cable out. Re-insert the cable fully, and then close the ZIF connector.

Controller and Power Supply Voltages



Controller voltage locations

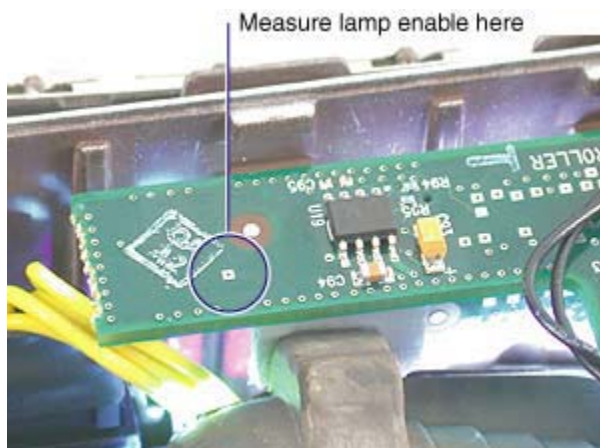
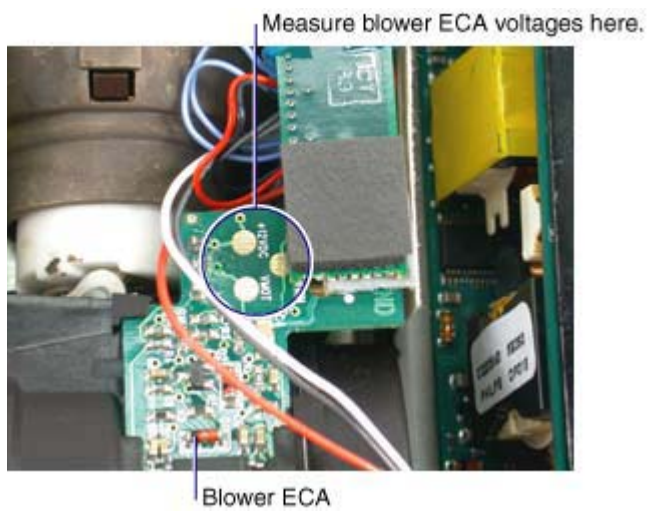
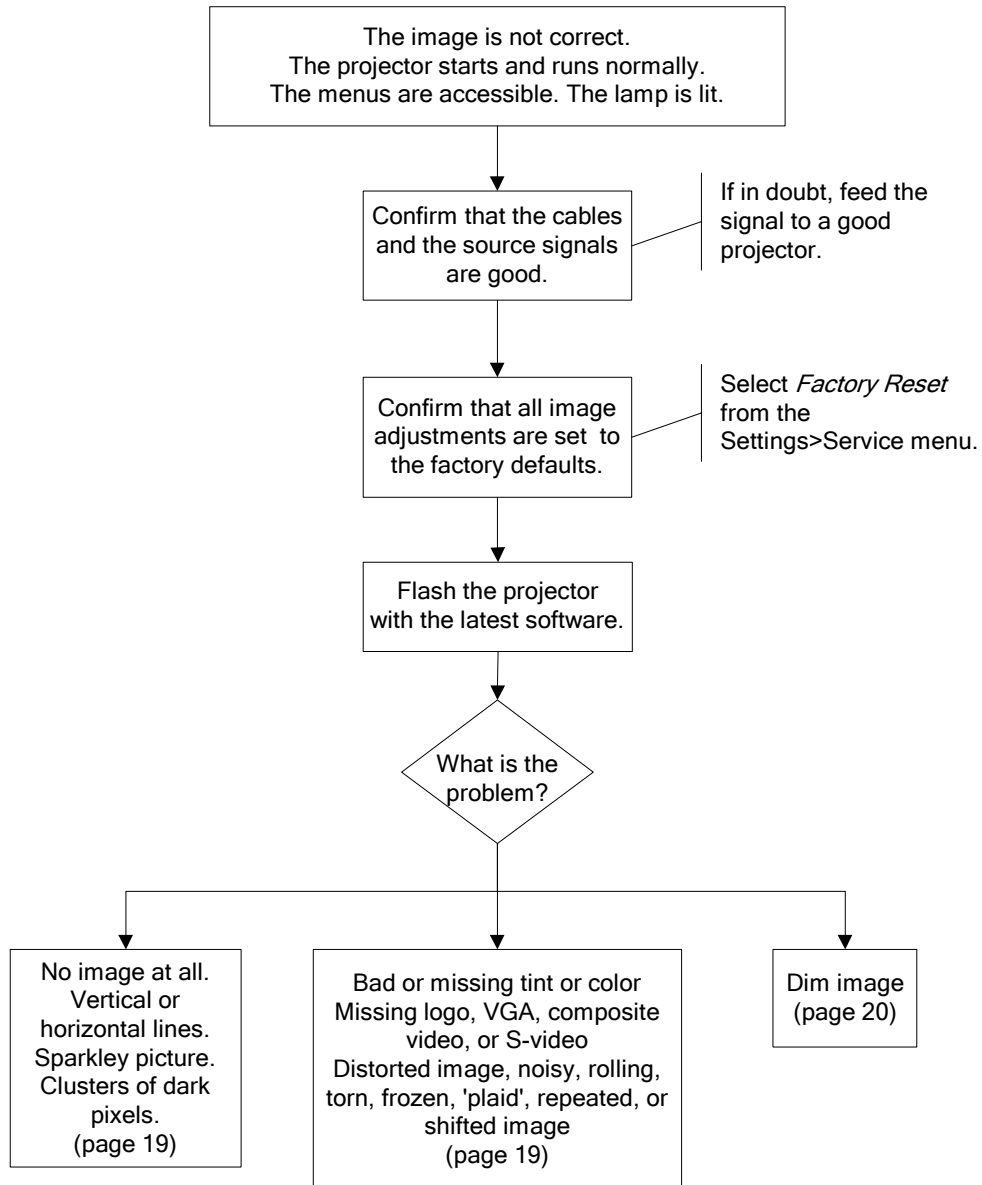
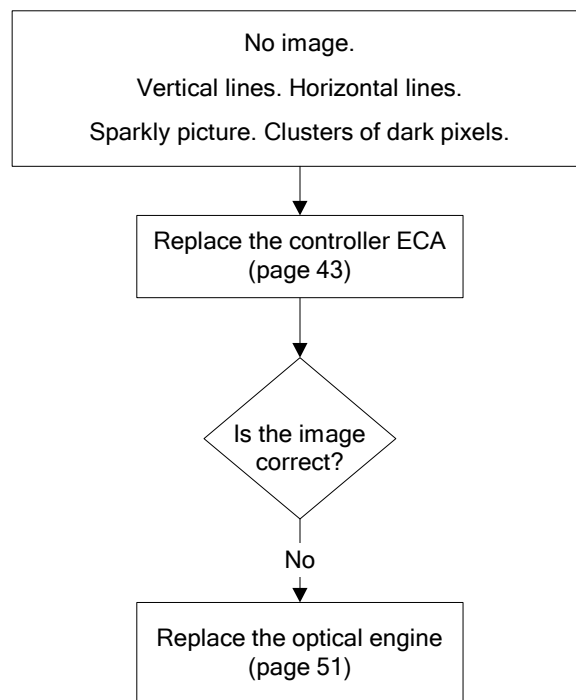


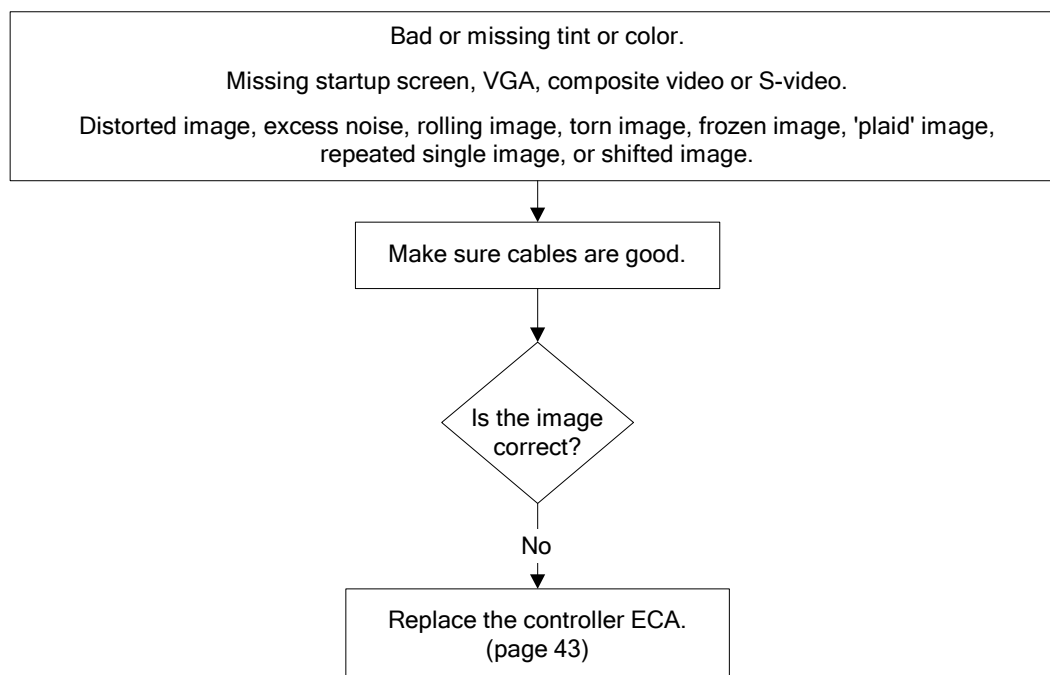
Image Problems



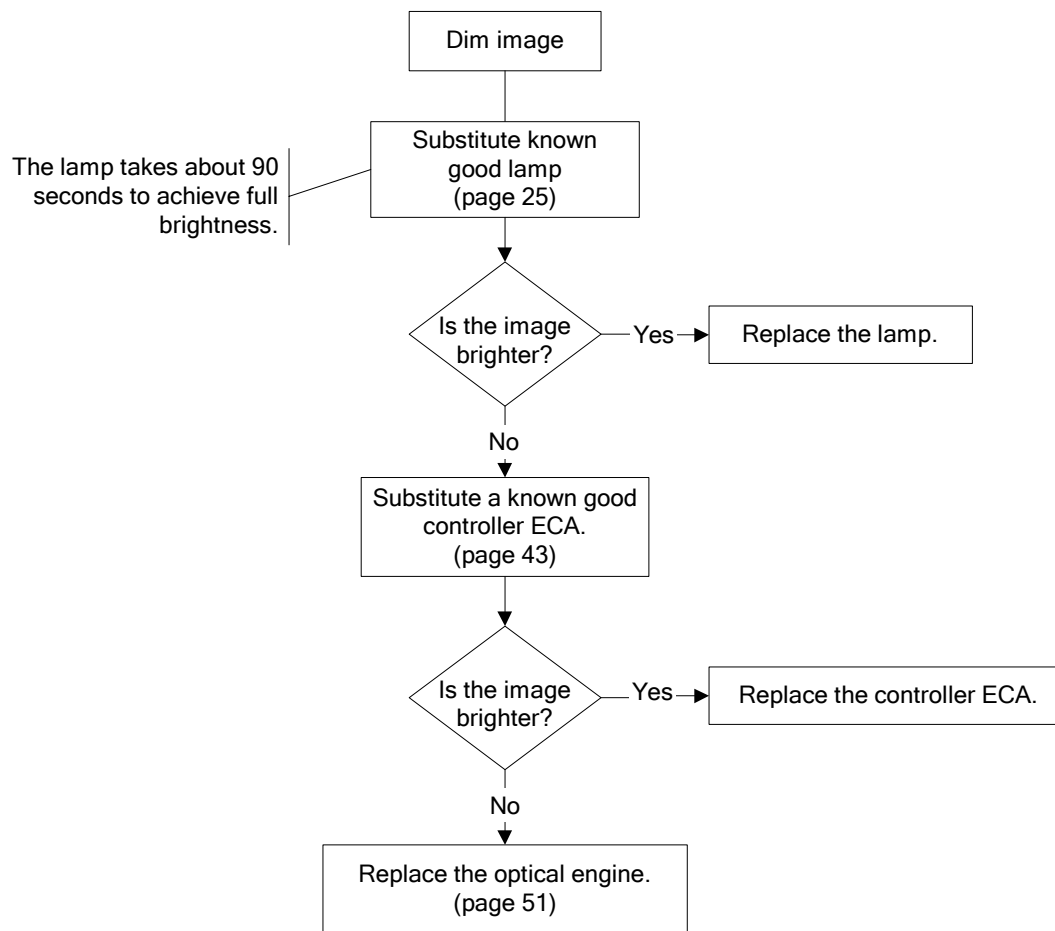
No image



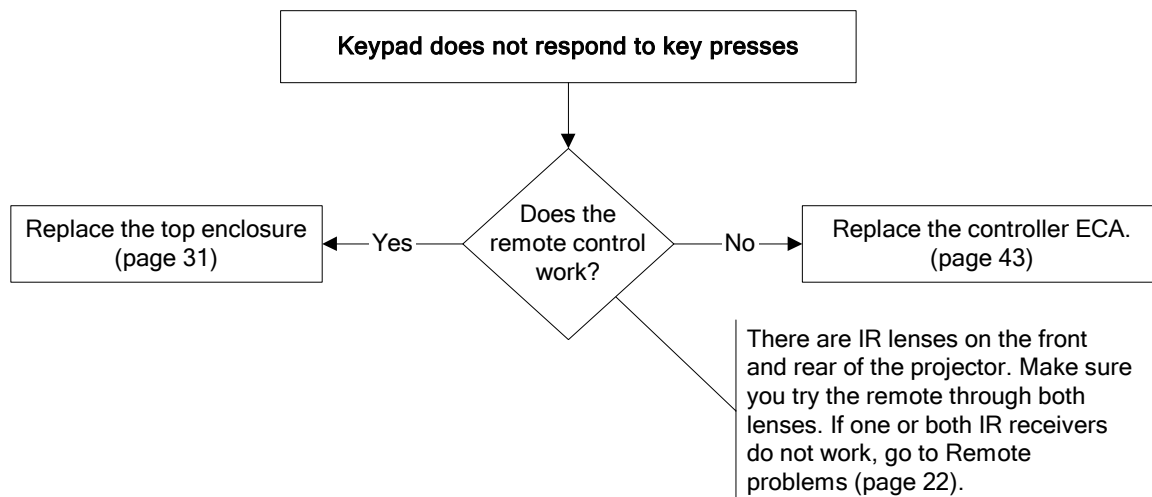
Bad colors



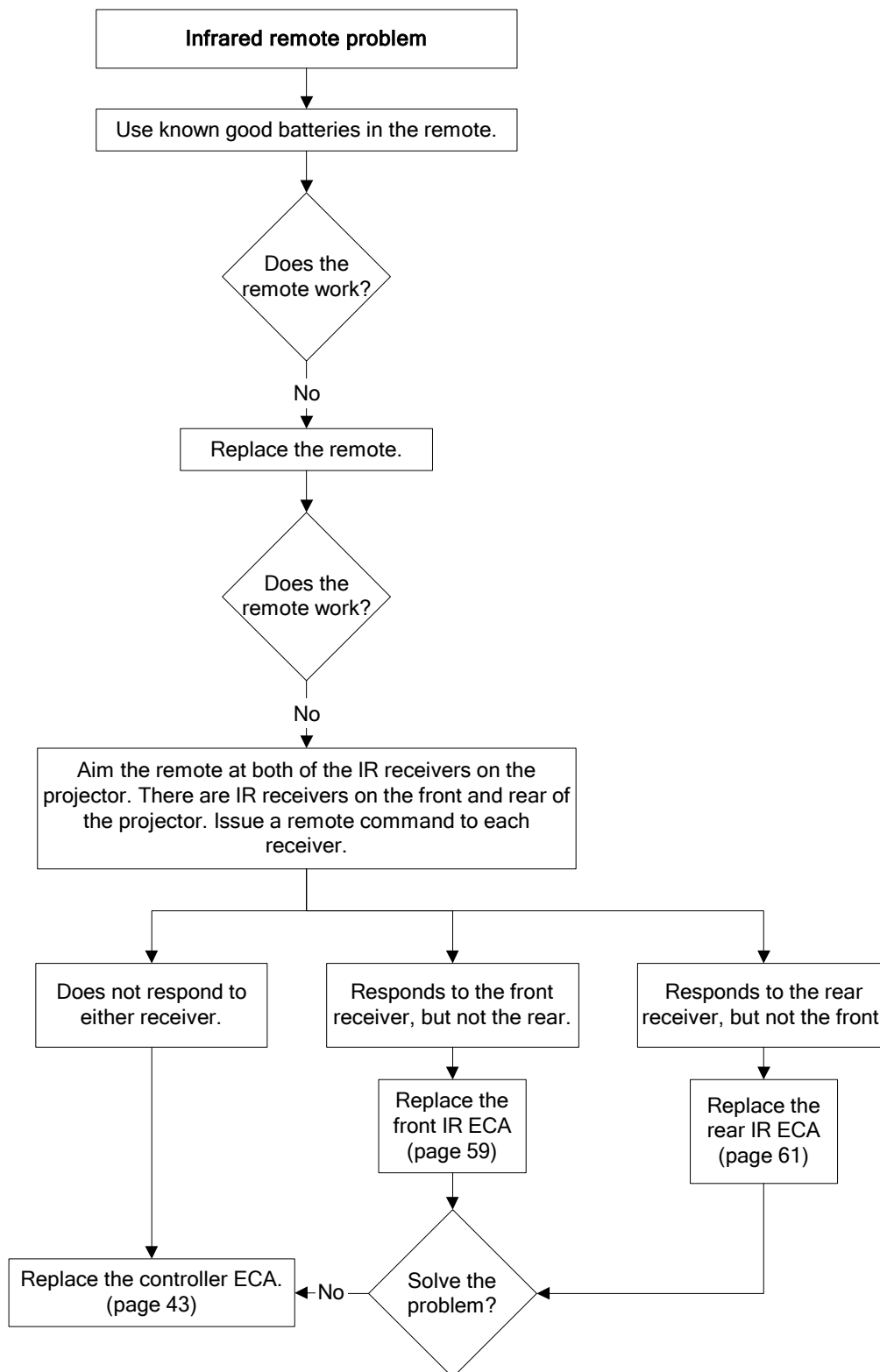
Dim image



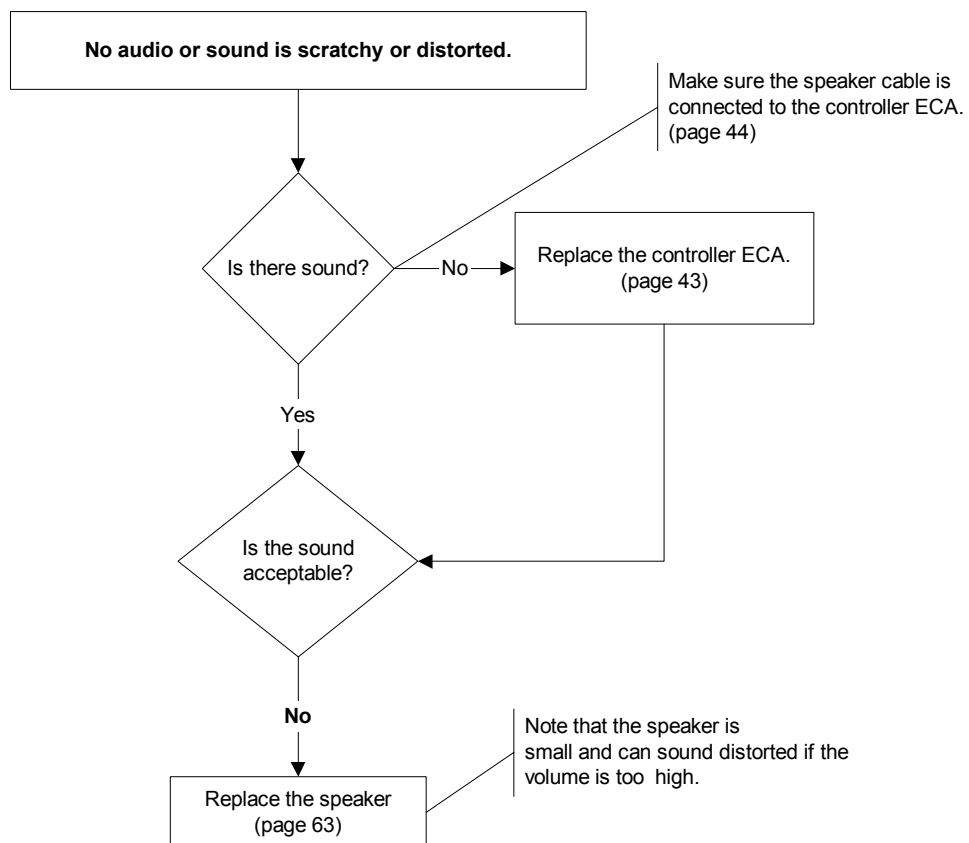
Keypad Problems



Remote Control Problems



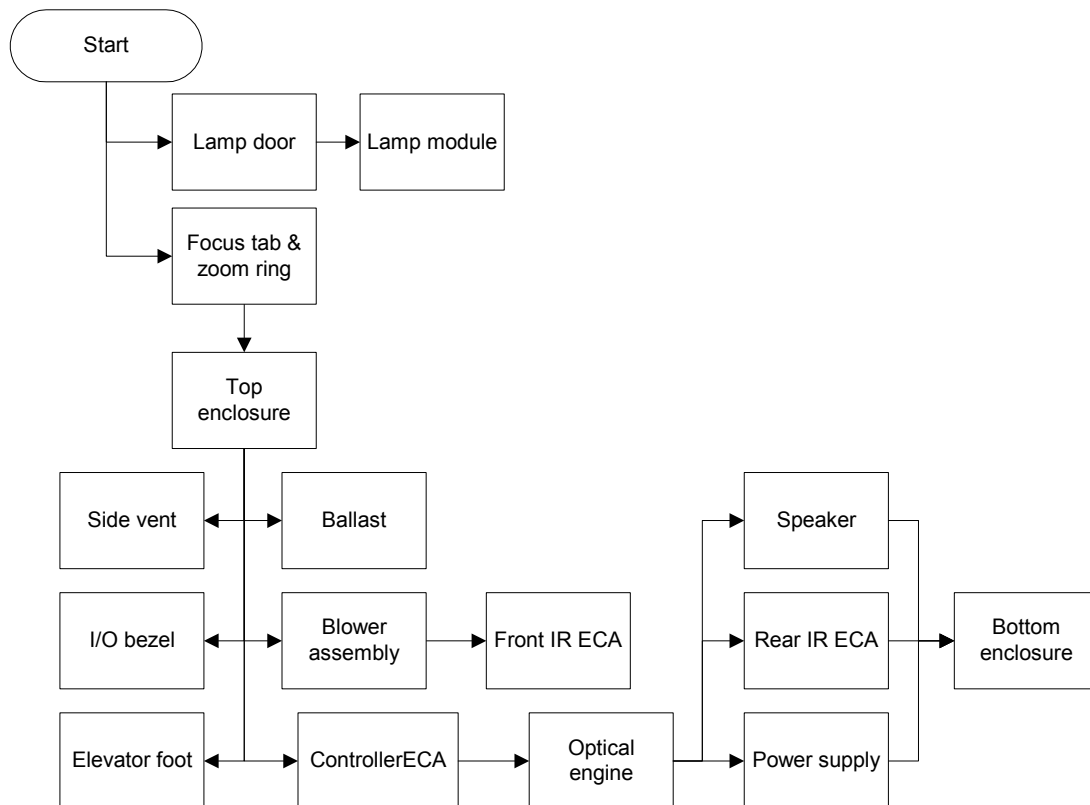
Audio Problems



Parts Removal and Replacement

Removable Parts Hierarchy

The flow chart below shows what parts must be removed to access each FRU in the projector. The parts on the first level (the lamp door, for example) are accessible without removing any other parts. The more levels down a part are, the more parts you need to remove.



Lamp Module

The **lamp door (505-1765-xx)** fits over the lamp cavity in the projector. It includes a tab that closes the interlock switch when the door is shut. The lamp door is a User-Replaceable Part. The **certification label** affixes to the lamp door. The certification label is included in the **label kit (802-0035-xx)**.



The **lamp module (TLPLP6)** consists of a metal housing, an enclosed reflector assembly and an arc tube.



CAUTION The lamp module gets very hot during operation. Allow the lamp to cool for 60 minutes before handling it.

- 1 Place the projector upside down on a soft work surface.
- 2 To remove the lamp door, loosen the two captive screws that secure it to the projector.



- 3 Insert a small bladed screwdriver into the pry point and lift the lamp door off of the projector.



- 4 To remove the lamp, do the following:

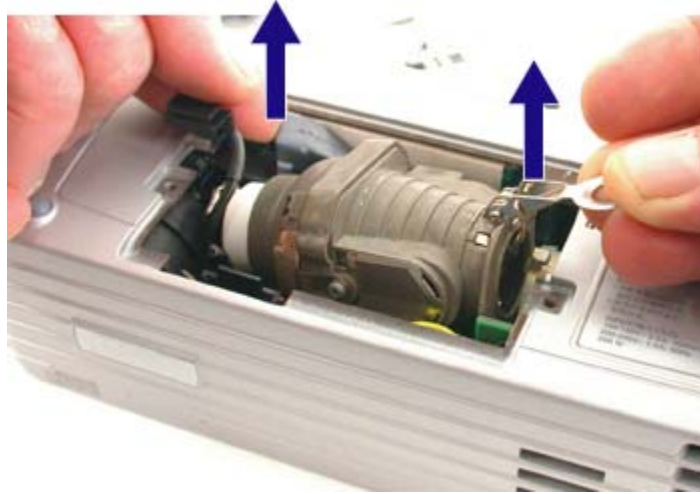
1. Disconnect the lamp power connector from its plug in the projector. To do this, press down on the latch on the top of the connector, while pulling the connector out of the plug.



2. Lift the handle on the lamp to release the latch that holds the lamp in place. Then lift the latch off the tab inside the projector.



3. To remove the lamp, lift the handle upward and slightly back to disengage the alignment tab and fan ducting. If necessary, gently press down on the fan ducting.



Assembly Notes

- ◆ To install the lamp, first align the tab on the bottom of the lens end of the lamp with the slot inside the projector. Then align the duct on the rear of the lamp with the duct inside the projector. Press the lamp into place.
- ◆ Place the latch over the tab in the projector. Make sure that the latch fully engages the tab. Then press the handle down to lock the lamp in place.
- ◆ To install the lamp door, insert the two tabs on the door into the matching slots near the front of the projector. Swing the lamp door shut, pressing it into place so that the lamp connector on the door engages. Tighten the captive screws to 3 in./lbs. (.329 Nm).
- ◆ If you installed a new lamp door, affix a new certification label to the door.
- ◆ If you installed a new lamp, reset the lamp timer. To do this, press and hold the Volume + and Volume - keys for 10 seconds. After you reset the lamp timer, read the timer value to make sure it was reset. Navigate to the About screen from the Main Menu, then view the Lamp Hour value. It should show 0 hours.

Focus ring and zoom tab

The **focus ring (505-1302-xx)** fits around the front of the projection lens. The **zoom tab (340-1149-xx)** snaps into place adjacent to the focus ring. The focus ring and zoom tab can be replaced without disassembling the projector. All Both parts are available as User Replaceable Parts, and both parts are included in the TDP-P6 **Hardware Kit (802-0036-xx)**.

The **lens cap (505-1694-xx)** snaps onto the focus ring. It includes a tether, which anchors to the top enclosure. The lens cap is a User Replaceable Part.



Focus ring

Zoom tab

Lens cap and tether

- 1 Place the projector on the work surface with the lens pointing upward.
- 2 To remove the zoom tab, insert a small bladed screwdriver between the tab and the front bezel. Place one finger on the tab while prying up with the screwdriver. Take care when you do this: the zoom tab has two delicate tabs. Once the tab is loose, lift it off of the projector. (Note that if the tab is broken off, you can pry the part off by inserting the screwdriver between the zoom tab body and the focus ring.)



- 3 To remove the focus ring, insert a small bladed between the focus ring and the top enclosure, and then pry gently to partially loosen the ring. Then lift the ring off of the projector.



Assembly Notes

- ◆ The focus ring is held in place when the three slots in the ring engage three matching pins on the lens barrel. To install the ring, place on the lens barrel, then turn it until you feel the slots align with the pins. Then press the ring into place. The focus ring should appear as illustrated below when it is properly installed.



- ◆ To install the zoom tab, insert it into the alignment slots on the inner zoom ring, and then press it into place. In the illustration below, the alignment is shown with the focus ring removed so you can see how the zoom tab fits into the zoom ring.



Top enclosure

The **top enclosure (505-1767-xx)** covers the top half of the projector. Once you remove the top enclosure, you have access to the parts inside the projector. When you replace the top enclosure, you need to adhere a new **front brand label** and a **top brand label** to the enclosure. The labels are available in the **label kit (802-0035-xx)**.



A new top enclosure includes a speaker, the elevator mechanism, the keypad, and the front IR lens. The speaker, the elevator foot and the IR lens are available separately. The other items are available only in a new top enclosure.

The **side vent (505-1294-21)** and the **I/O bezel (505-1764-xx)** cover the two ends of the projector. The vent and bezel are held in place by the top enclosure, and once the enclosure is removed, both are no longer fastened to the projector. The I/O bezel requires an **I/O label** from the **Label Kit (802-0035-xx)**.



Side vent

I/O bezel

The I/O bezel covers the I/O connectors on the side of the projection lens side of the projector. The side vent covers the intake and exhaust blowers on the opposite end.

- 1 Remove the focus ring and zoom tab (page 28)
- 2 Place the projector upside down on the bench, and then use a T6 Torx driver to remove the three black M2.5x6 Torx screws from the bottom case.



- 3 Turn the projector upright on the bench, and then extend the elevator foot all the way out.

- 4 Lift the front of the top enclosure off of the projector, and tilt it back so that you have access to the keypad cable connector on the controller ECA.

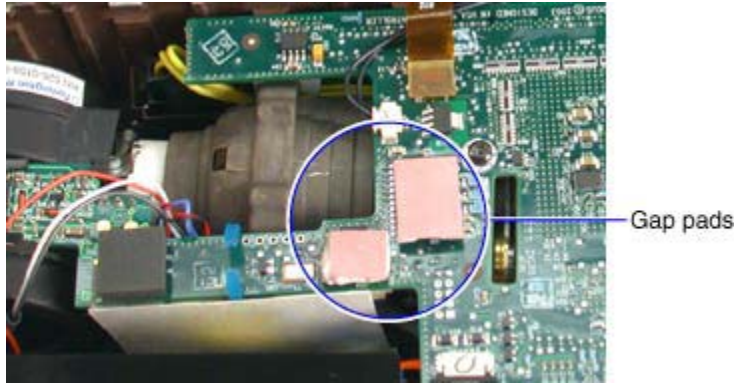


- 5 Unplug the keypad cable and remove the top enclosure.
- 6 Lift the side vent and the I/O bezel out from the projector. The two pieces are not fastened to the projector. You may need to flex the bottom enclosure outward slightly to disengage a tab on the top of each part.

Assembly Notes

- ◆ If you are installing a new top enclosure, ensure that the two gap pads adjacent to the ballast and lamp are in place on the controller ECA. They may have stuck to the inside of the old enclosure

Do not install the top enclosure without the gap pads in place.

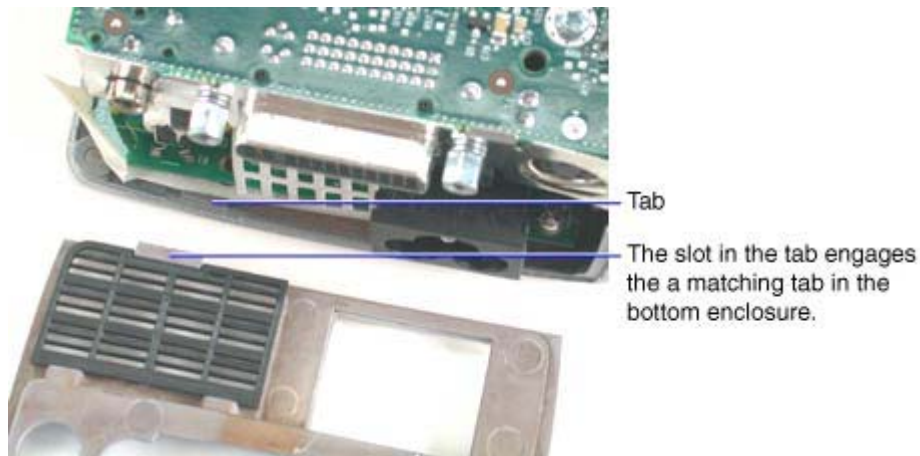


- ◆ Both sizes of gap pads are available in the **Hardware Kit (802-0036-xx)**.
- ◆ To install the top enclosure, do the following:
 1. Place the side vent in the bottom enclosure. The single, long tab fits at the bottom, mating with a matching tab on the bottom enclosure. Two tabs on the top mate with two slots in the top. Make sure the tab on the rear of the vent mates properly with the bottom enclosure.





2. Place the I/O bezel in the bottom enclosure. A slotted tab at the bottom of the bezel engages a matching tab on the bottom enclosure. Flex the bottom enclosure outward to engage the tab on the top of the bezel. The seams are smooth when the bezel is properly installed.

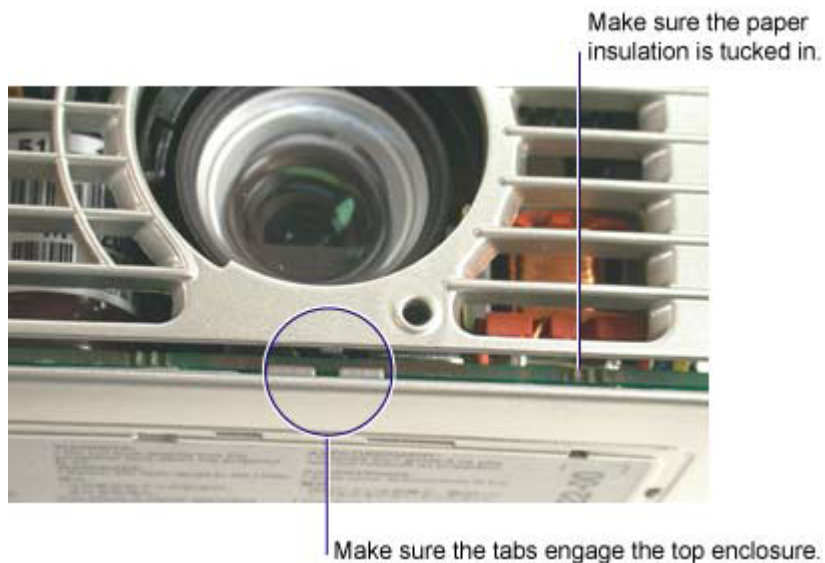


NOTE If you are installing a new I/O bezel, adhere an **I/O label** to the bezel. The I/O label is available in the **Label Kit** (802-0035-xx).

3. On the top enclosure, extend the elevator foot all the way out. You can also remove the elevator foot and install it after the two enclosure halves are fastened together.
4. Plug the keypad cable into its connector on the top of the controller ECA.
5. Engage the slots in the top enclosure with the matching tabs on the bottom enclosure. Then swing the top enclosure closed. As you do this, push in on the ballast and hold the side vent in place. Two tabs on the top of the side vent mate with two slots in the top enclosure.



6. As you close the top, make sure that no cables or insulating paper obstruct the fit, and that no cables are pinched between the enclosure halves.



7. When the top enclosure is properly installed the seams where the enclosures and exhaust bezel meet are even. You may need to hold the projector in both hands to adjust the pieces to get proper alignment.



Correct alignment



Correct alignment

8. Once the top, bottom and sides fit properly, install the middle screw on the bottom case first. Then install the other two screws. Torque the screws to 3 in.-lbs. (.329 Nm).
 9. If you removed the elevator, make sure to reinstall it. To install the elevator, press the elevator button down, and then slide the elevator shaft into its slot. When you release the elevator button, the foot and shaft will stay in place.
- ◆ If you're replacing the top case with a new one, affix the two brand labels to the new top enclosure.

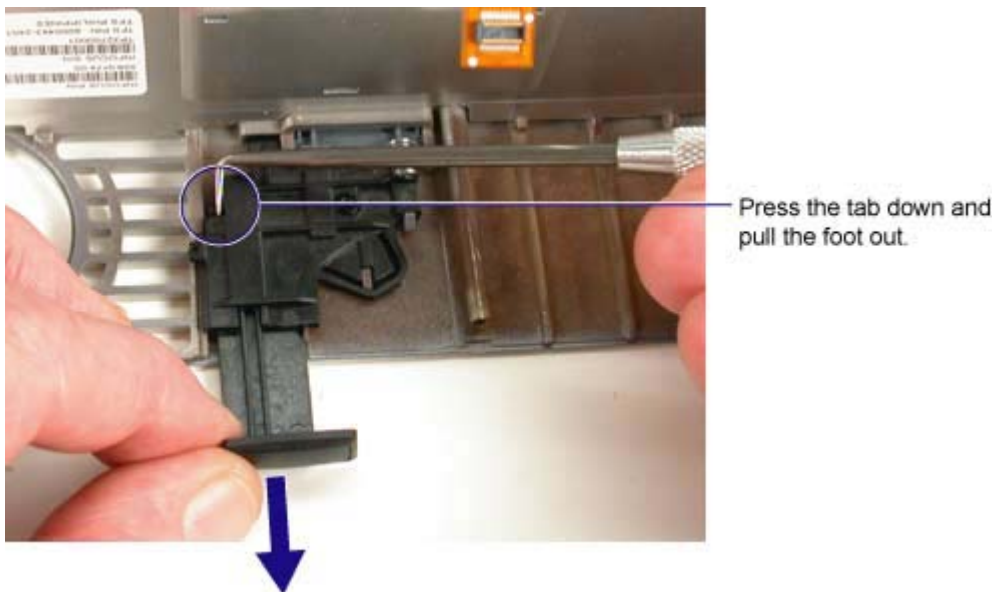
Elevator foot

The **Elevator Foot** fastens to the inside of the top enclosure. It is included with a new top enclosure, and is available separately as well in the **Hardware Kit** (802-0036-xx).

The elevator foot fits in the elevator assembly, which snaps onto the top enclosure. The elevator assembly itself is not available separately. It is included in a new top enclosure.



- 1 Remove the following items:
Zoom tab and focus ring (page 28)
Top enclosure (page 31)
- 2 Press the elevator button to lower the elevator shaft all the way.
- 3 Press the retaining tab on the top of the elevator shaft, and then withdraw the foot and shaft. If the shaft is broken, you may need to use a pick to push it down far enough to release it.



Assembly Note

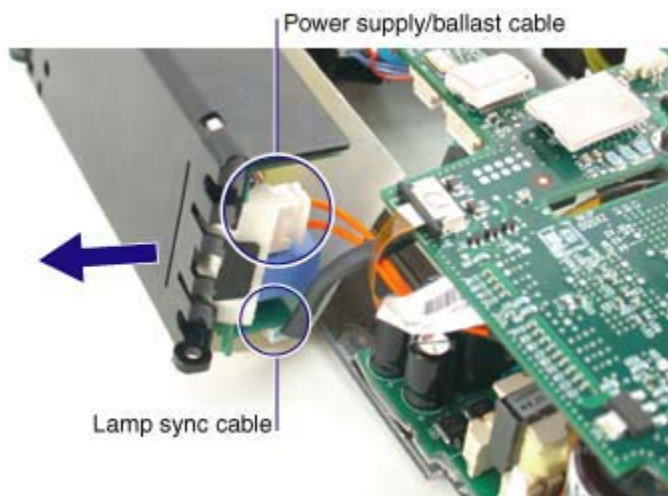
- ◆ It is easier to install the elevator with the top enclosure installed. Press the elevator button, and then slide the shaft into its slot in the elevator assembly. When you release the button, the shaft will lock into place.

Ballast

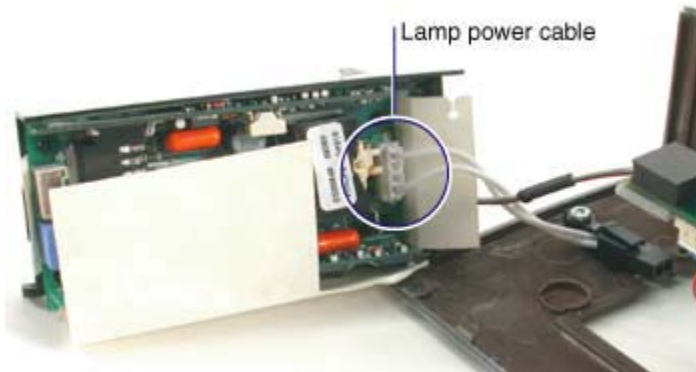
The **ballast (505-1808-xx)** is located in the front of the projector, adjacent to the blower assembly. The ballast steps up power from the power supply to ignite the lamp. The ballast is comprised an ECA, insulating paper and a bracket.



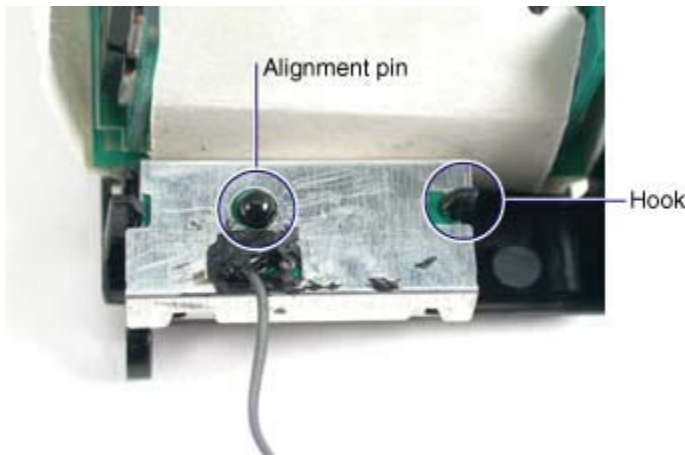
- 1 Remove the following items:
 - Focus ring & zoom tab (page 28)
 - Top enclosure and side vent (page 31)
- 2 Lift the ballast up slightly, and swing the side closest the middle of the projector outward to access the lamp sync cable and the power supply/ballast cable. Unplug the cables.



- 3 Once the cables are unplugged, swing the ballast out further so you can unplug the lamp power cable.



- 4 Place the ballast on the work surface so that the paper insulator faces up.
- 5 To detach the front IR assembly, release a hook that secures the assembly to the plastic ballast protector, then lift it off.



Assembly Notes

- ◆ Install the IR assembly first, and then plug the cables into their connectors in the reverse order.
- ◆ When you install the ballast, make sure that it remains secured to the black plastic protector, and that the paper insulator remains in place. Four pins in the protector fit into four matching holes in the main ballast ECA. The entire assembly snaps together. If the parts are not mated properly, you may not be able to correctly install the top enclosure.

Blower assembly

The **blower assembly (526-0159-xx)** is comprised of an intake blower, an exhaust blower and small ECA that controls fan speed. The assembly also includes two rubber gaskets that fit blower ports and two rubber feet that ensure quiet operation.



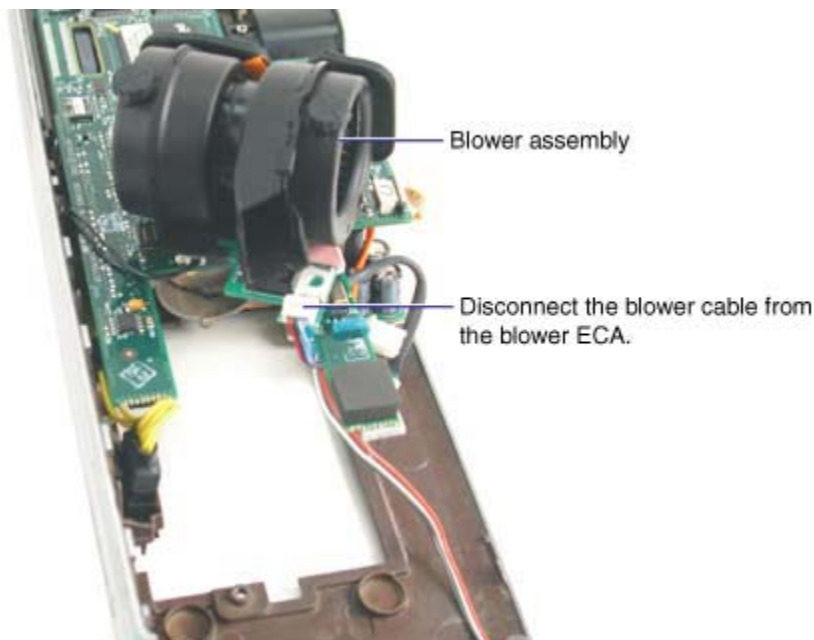
- 1 Remove the following items:

Lamp module & lamp door (page 25)

Zoom tab & focus ring (page 28)

Top enclosure and side vent (page 31)

- 2 Lift the blower assembly up, and then rotate it so that it so that the blower ports face the front of the projector and that top of the blower rests on the ballast.



- 3 Unplug the blower cable from its connector on the bottom of the blower ECA. See the illustration above.

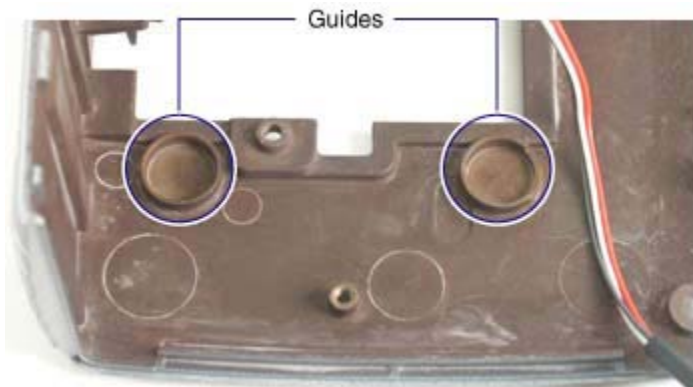
NOTE When you remove the blower assembly, the rubber feet may remain in the bottom enclosure. Make to reinstall them as shown in the Assembly Notes below.

Assembly Notes

- ◆ Make sure the rubber feet are attached to the bottom of the blower assembly before you install it. The feet have +-shaped slots that mate with the +-shaped tabs on the bottom of the blower.



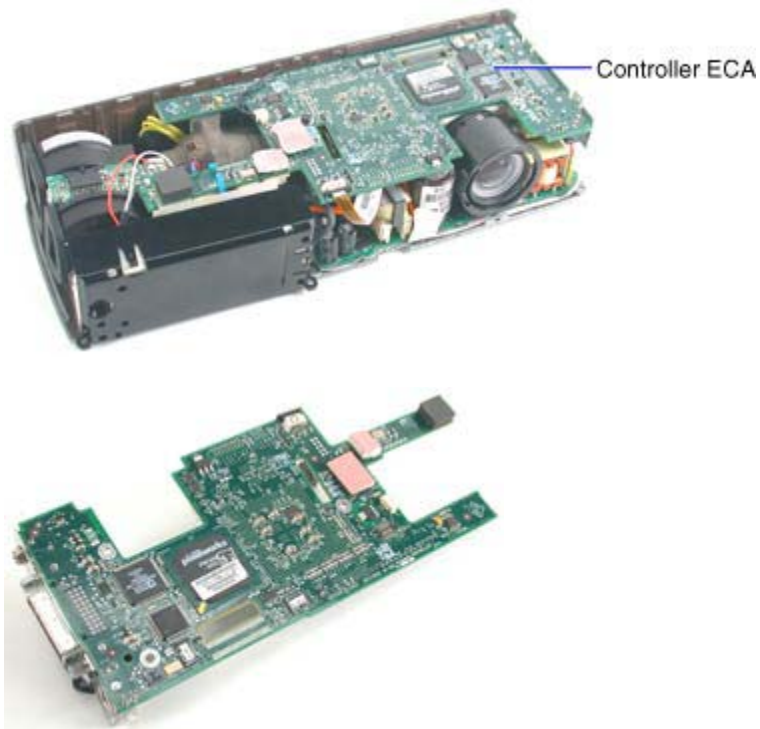
- ◆ Place the blower assembly upside down on the controller ECA, then plug the blower power cable into its connector. See step 2 above.
 1. Rotate the blower as you lower it into the bottom enclosure, making sure that the following surfaces mate properly:
 2. The feet fit into the matching round guides in the bottom enclosure



3. The portion of the ECA above the blower power cable connector fits beneath the controller ECA. Note that there is a dampening pad that fits between the two ECAs. This pad must be in place. If it is missing, order the **hardware kit (802-0036-xx)**.

Controller ECA

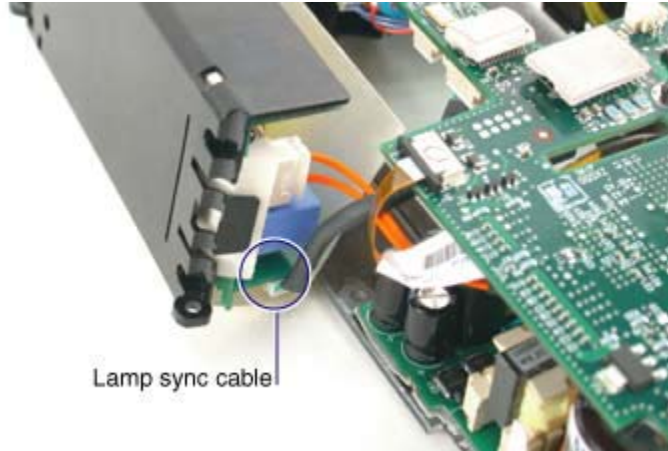
The **controller ECA (510-1733-xx)** mounts to the top of the optical engine.



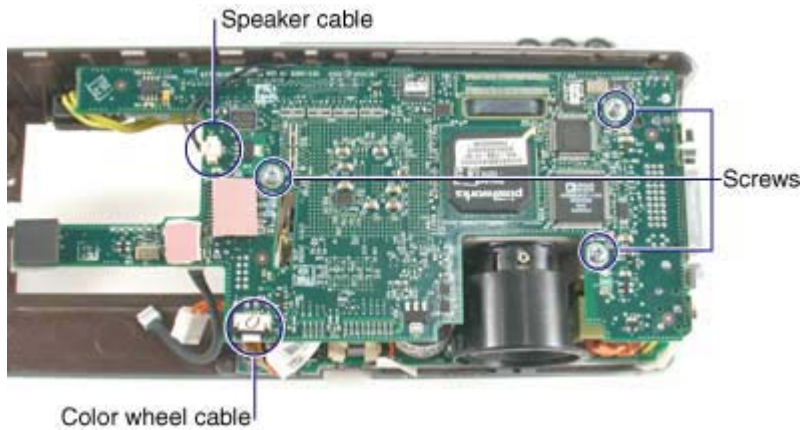
WARNING Be sure to take proper ESD precautions while working near the controller ECA. It can be easily damaged by static electricity. ECAs damaged by static electricity require replacement.

- 1 Remove the following items:
 - Lamp & lamp door (page 25)
 - Zoom tab & focus ring (page 28)
 - Top enclosure and I/O bezel (page 31)

- 2 Swing the end of the ballast closest to the lens slightly outward so that you have access to the cables that connect to the ballast. The lamp sync cable connects between the ballast and controller ECA. Disconnect the cable on the ballast side.

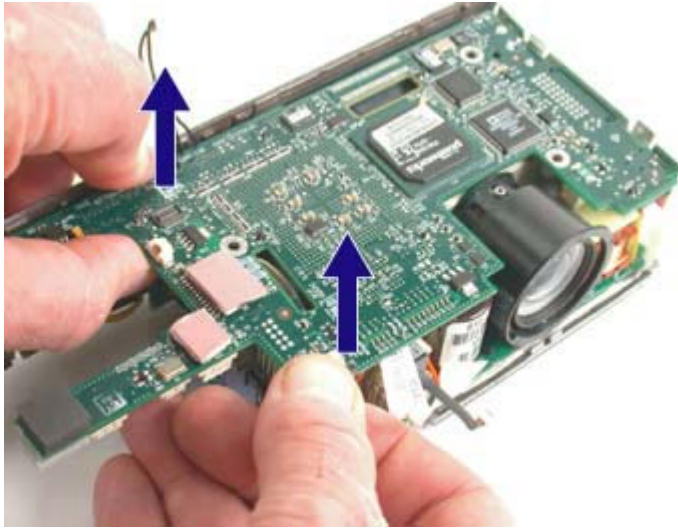


- 3 Unplug the color wheel cable and the speaker cable.

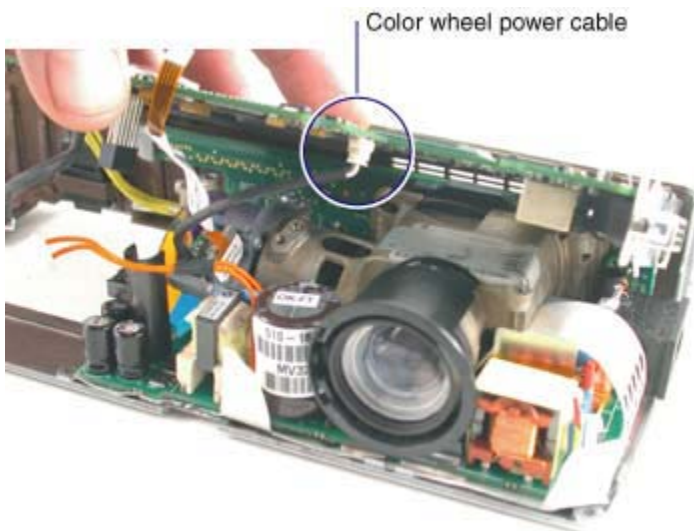


- 4 Remove the three M2.5x4 Torx screws that fasten the controller ECA to the engine. See the illustration above.

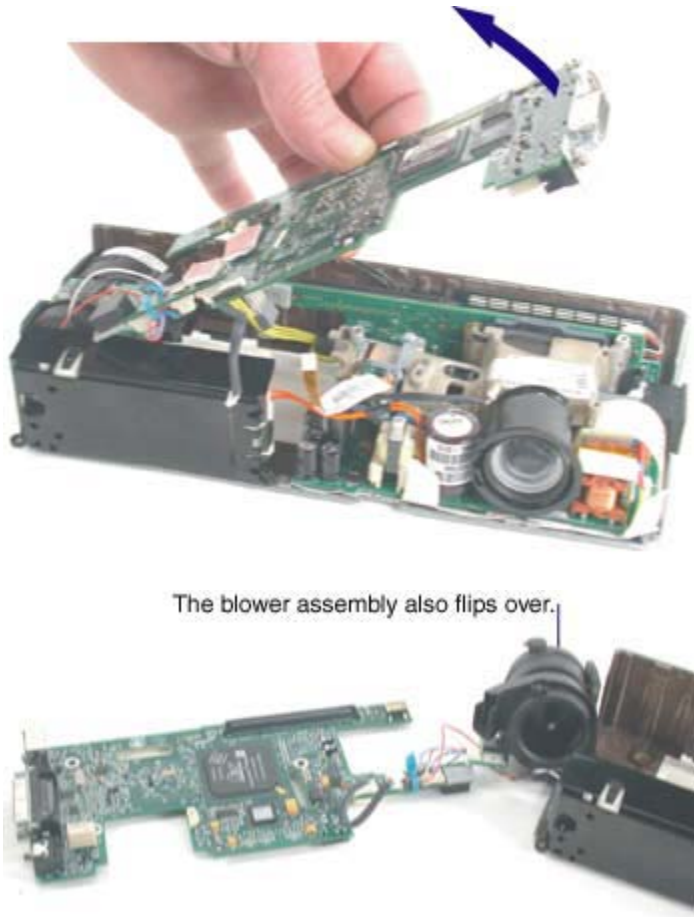
- 5 Lift the controller upward to disconnect the engine/controller connector and the controller/power supply connector. Lift at the points shown below.



- 6 Unplug the color wheel power cable from the bottom of the controller.



- 7 Carefully flip the controller over so that you can place it on the work surface as shown below. The controller is still connected to the ballast and blower assembly. As you turn the controller over, make sure the blower assembly turns too.



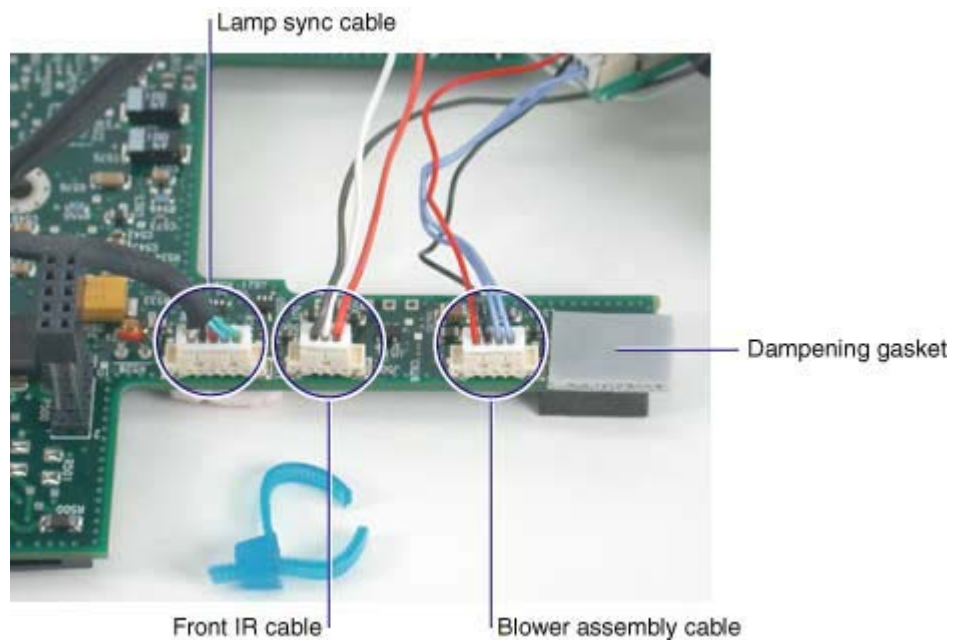
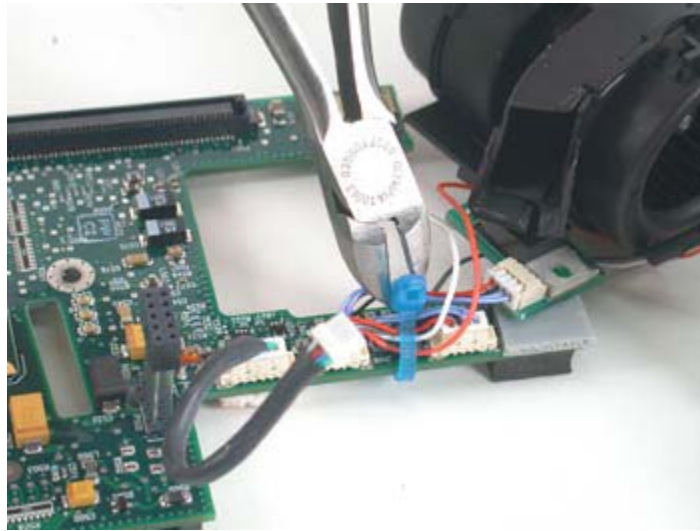
- 8 Do one of the following:

If you need to replace the **optical engine, power supply, speaker, rear IR ECA** or **bottom enclosure**, continue to the procedure for the part.

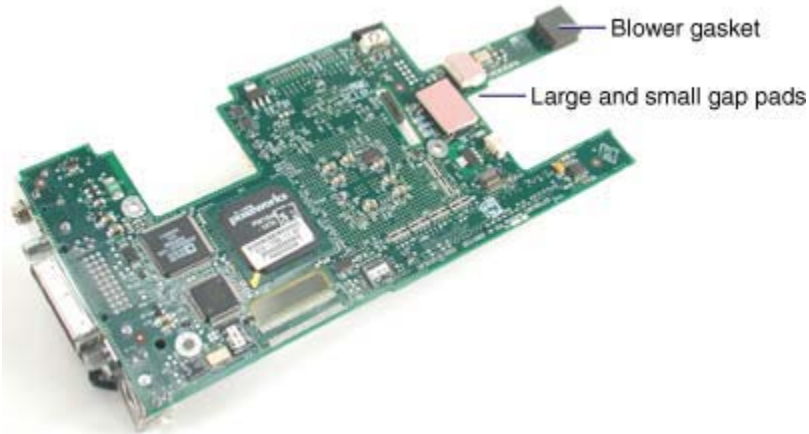
—Or—

If you need to replace the controller ECA with a new one, do the following:

1. Clip the tie wrap that retains the IR and blower assembly cables to the controller ECA, then unplug the two cables. Also unplug the lamp sync cable.



2. Remove the two gap pads and the blower gasket on the top of the controller, and the dampening gasket (shown above) on the bottom. You will install these on the new controller ECA. If any of the pads are missing or damaged, they are available in the **Hardware Kit (802-0036-xx)**.



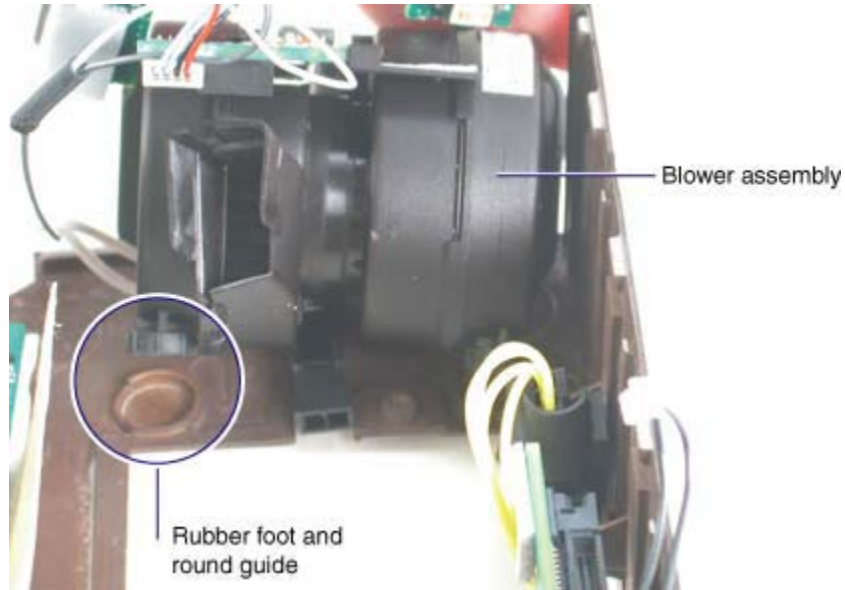
Assembly Notes

- ◆ If you are installing a new controller ECA, do the following. Otherwise, skip to the next bullet.
 1. Adhere the two gap pads and the blower gasket as shown in step 8 above. Adhere the dampening gasket to the bottom of the controller as shown in step 8 above. **Do not** install the controller ECA without the pads and gaskets. Damage to the projector may occur.
 2. Plug the front IR, blower assembly and lamp sync cables into their connectors on the controller ECA. Fasten a new tie wrap to retain the cables. See step 7 above. Spare tie wraps are available in the **Hardware Kit (802-0036-xx)**.

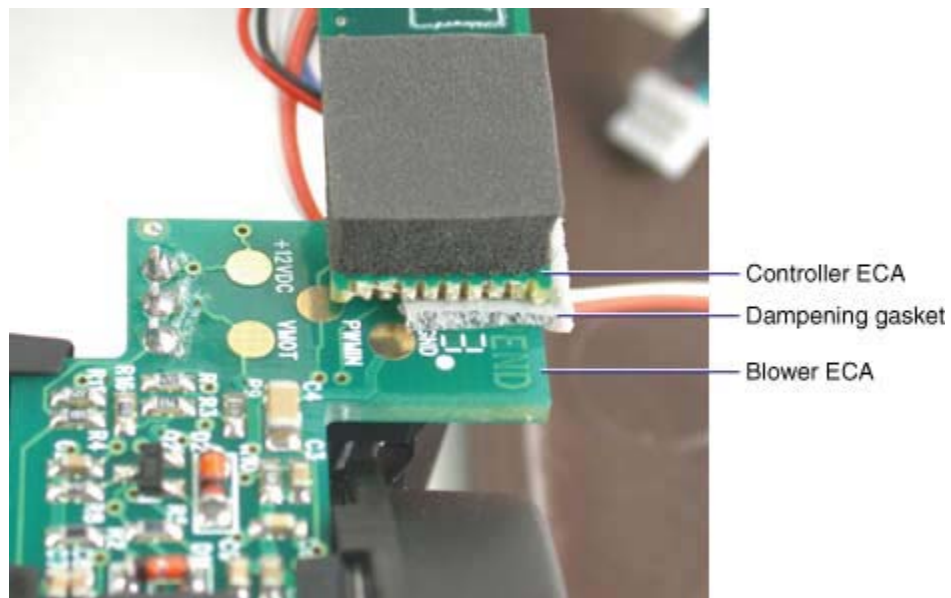
NOTE Fasten the tie wrap so that the joint is on the bottom of the controller. If it is on the top, it will interfere with the top enclosure.

1. Carefully flip the controller and blower assembly back into place in the projector.

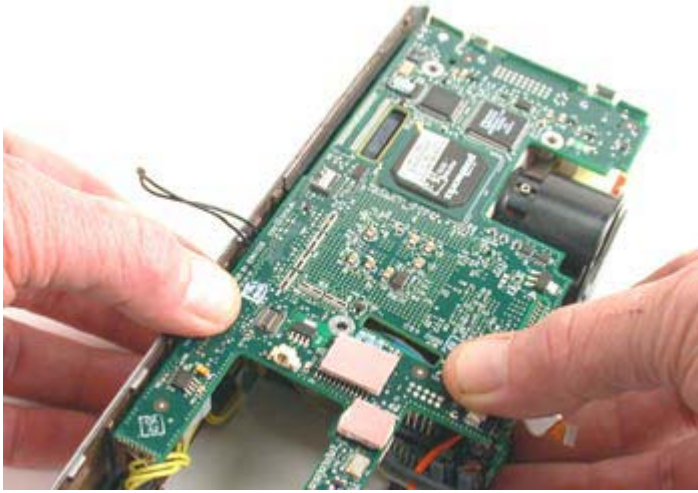
2. Make sure that the two rubber feet on the blower assembly fit into the round guides in the bottom enclosure.



3. Make sure that the ECA on the blower assembly and the controller ECA meet as shown below.



- ◆ Plug in the color wheel power cable. See step 6 in the disassembly procedure.
- ◆ Align the controller/power supply and controller/engine connectors. Ensure that the color wheel is centered in the cutout on the controller. Then press the controller firmly as shown below to fully engage the connectors.



- ◆ Fasten the controller to the optical engine with the three M2.5x4 screws. Torque the screws to 3 in./lb. (.329 Nm).
- ◆ Plug in the speaker and color wheel cables. See step 3 of the disassembly procedure.

Optical engine

The **optical engine (535-0017-xx)** fastens to the bottom case. The engine comprises all parts in the light path with the exception of the lamp module.



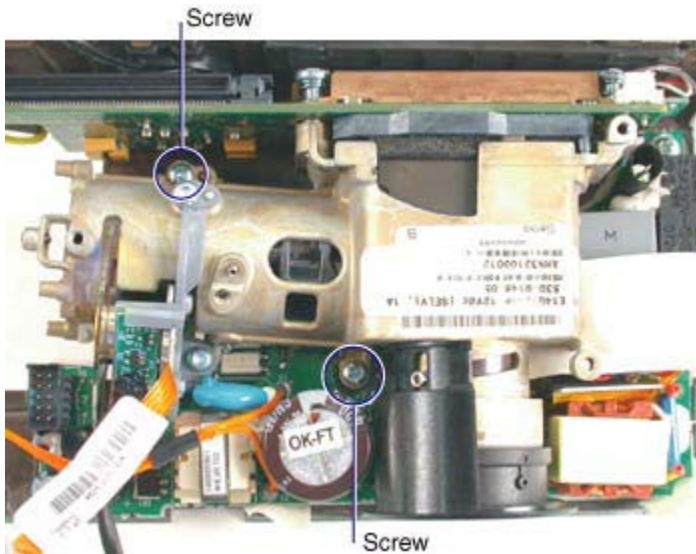
A new optical engine includes a rear IR ECA. The rear IR ECA is also available in the **Hardware Kit (802-0036-xx)**.

- 1 Remove the following items:
 - Lamp door and lamp (page 25)
 - Zoom tab and focus ring (page 28)
 - Top enclosure, I/O bezel and side vent (page 31)
 - Controller ECA (page 43)
- 2 On the outside of the projector, remove the black M2.5x4 Torx screw that fastens the optical engine to the bottom enclosure.

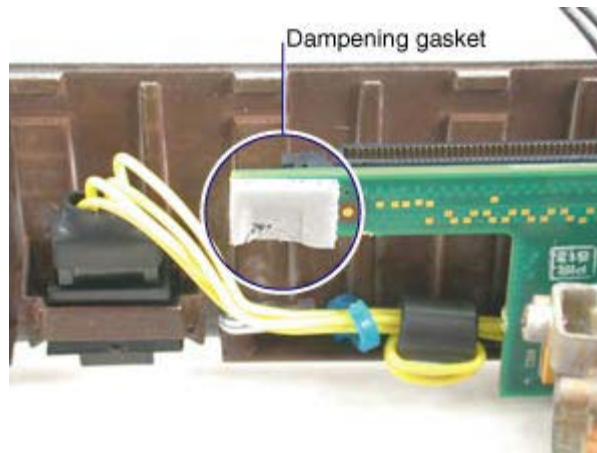


- 3 Turn the projector right side up on the work surface.

- 4 Remove the two M2.5x4 Torx screws that fasten the engine to the bottom enclosure and power supply.



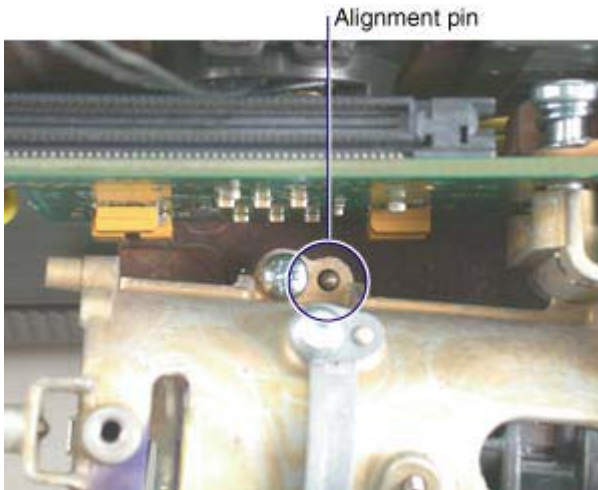
- 5 Lift the engine out of the bottom enclosure.
- 6 If you are replacing the engine with a new one, do the following:
 1. Remove the dampening gasket on the end of the formatter ECA as shown below. You will install the gasket on the new engine. If the gasket is missing or damaged, a new one is available in the **Hardware Kit (802-0036-xx)**.



2. Place the old engine in the plastic clamshell in which the new engine was packaged.

Assembly Notes

- ◆ Install the dampening pad on a new engine. See step 6 above.
- ◆ When you place the engine in the bottom enclosure, make sure the alignment pin on the boss in the bottom enclosure fits into the matching hole on the tab on the engine.



- ◆ Torque the two M2.5x4 Torx screws that fasten the engine inside the bottom enclosure to 6 in/lbs (.68 Nm). Torque the black M2.5x4 screw on the outside of the enclosure to 3 in/lbs (.34 Nm).

Power supply

The **power supply (510-1652-xx)** fastens to the bottom enclosure. It converts 100-240 VAC supply voltage to various low voltage DC levels required internally by the projector.

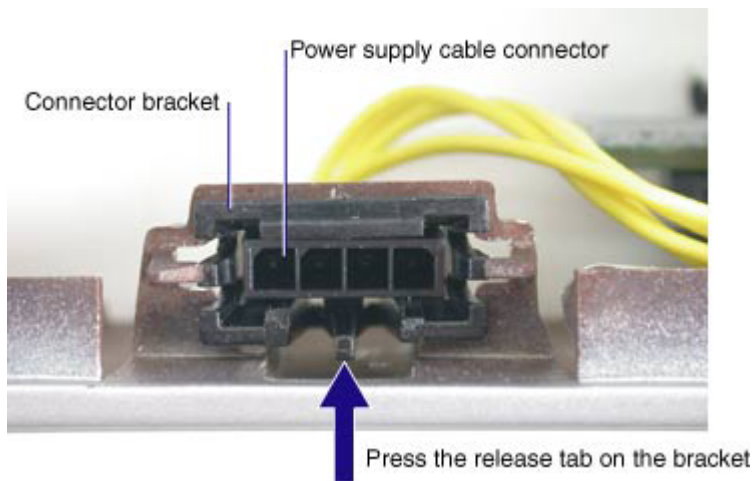


SPECIAL NOTE The power supply rests on a series of plastic standoffs and gap pads mounted in the bottom enclosure. The standoffs, gap pads and a paper insulator are included with a new bottom enclosure. These items must be in place to ensure that the power supply does not get damaged and to prevent any chance of electrical shock to users. When you replace the power supply, make sure all the items are in place before installing the part.

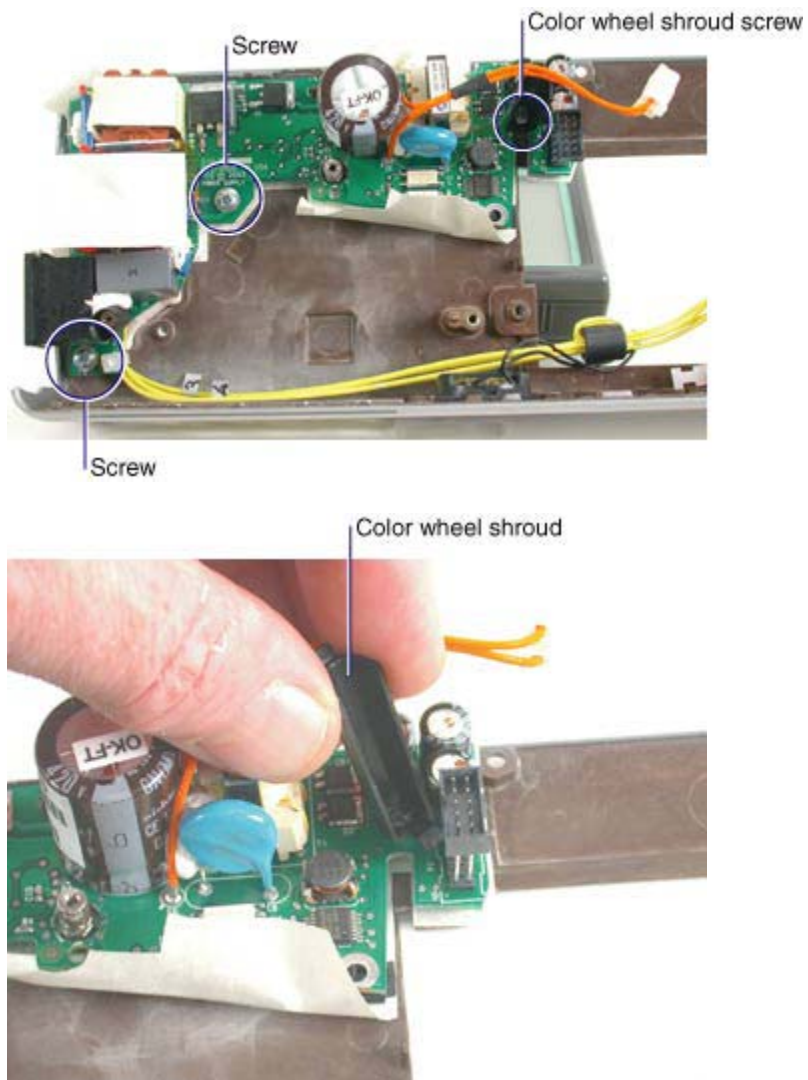
- 1 Remove the following items:
 - Lamp door and lamp (page 25)
 - Zoom tab and focus ring (page 28)
 - Top enclosure, I/O bezel and side vent (page 31)
 - Controller ECA (page 43)
 - Optical engine (page 51)
- 2 Clip the tie wrap on the power supply cable.



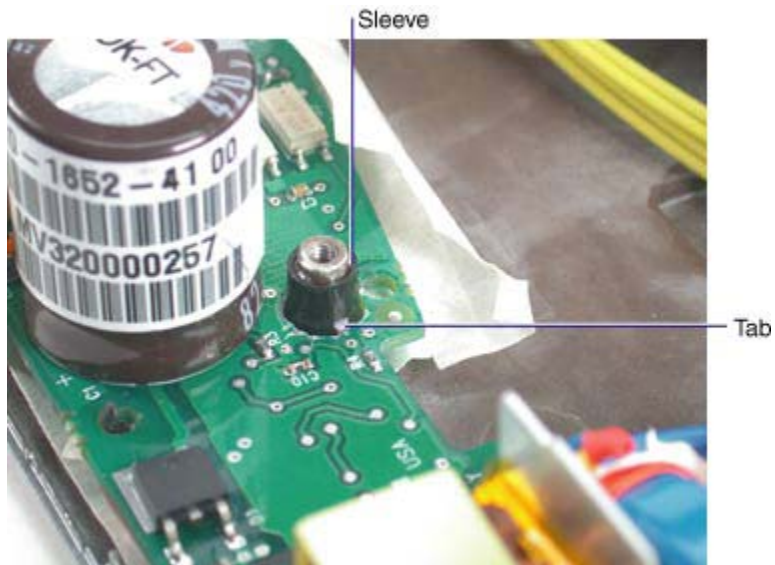
- 3 The connector on the power supply cable fits into a connector bracket attached to the bottom enclosure. You separate the two from the outside of the lamp door. To do this, press the locking tab on the outside of the plastic connector. Withdraw the connector from the inside of the projector.



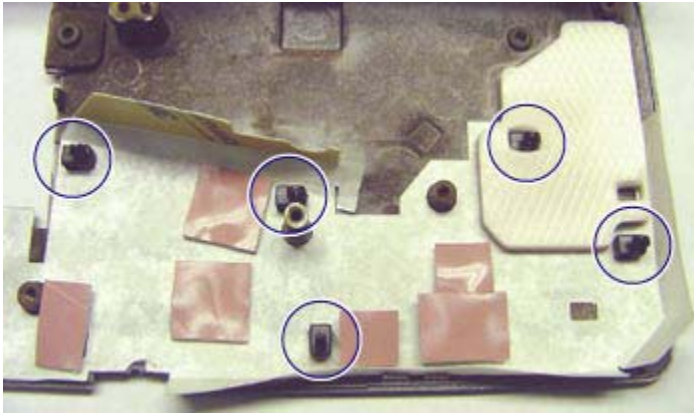
- 4 Use a T-8 driver to remove the two M2.5x4 screws that fasten the power supply to the bottom enclosure and M2.5x5 screw that fasten the color wheel shroud to the power supply. Then remove the shroud.



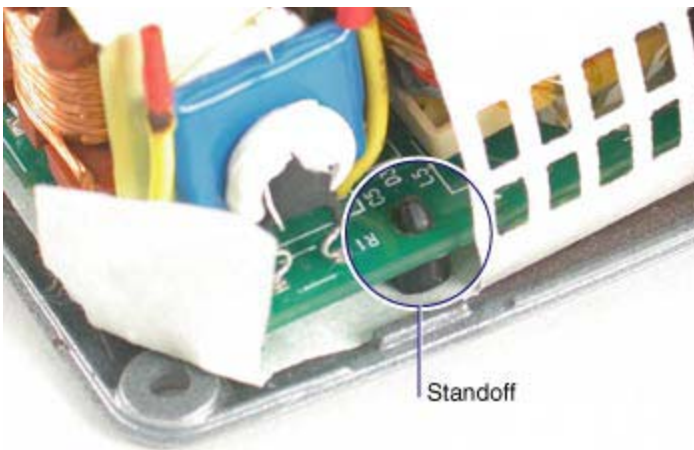
- 5 Before you can lift the power supply out of the projector, you may need to trim the tabs on a sleeve that fits on a boss in the bottom enclosure. The power supply fits over the sleeve and boss, and the optical engine fastens to the boss. The sleeve is located adjacent to the 82mF capacitor.



- 6 As you lift the power supply out of the bottom enclosure, it may stick to the gap pads between the ECA and the enclosure. There are five plastic standoffs (circled below) that fit into five matching holes on the power supply.



- 7 You may need to pry gently with a bladed screwdriver to lift the board off of the standoffs.



Assembly Notes

- ◆ Ensure that all gap pads, the standoffs and the sleeve are present before installing the power supply. See the illustration in step 6 above for locations.
- ◆ Align the power supply over the sleeve and tabs and press it over the tabs so they snap into place.
- ◆ Install the color wheel shroud. Torque the screws to 3 in-lbs (.34 Nm).
- ◆ Make sure that you route the safety switch cable through the eye at the front left side of the chassis.
- ◆ Route the power supply cable along the edge of the bottom enclosure so that it does not get pinched when the other parts are installed.
- ◆ After you insert the power supply cable connector into the connector bracket, install a new tie wrap (available in the **Hardware Kit** [802-0036-xx]) to secure the cable to the metal bracket adjacent to the lamp door opening.

Front and rear IR receivers

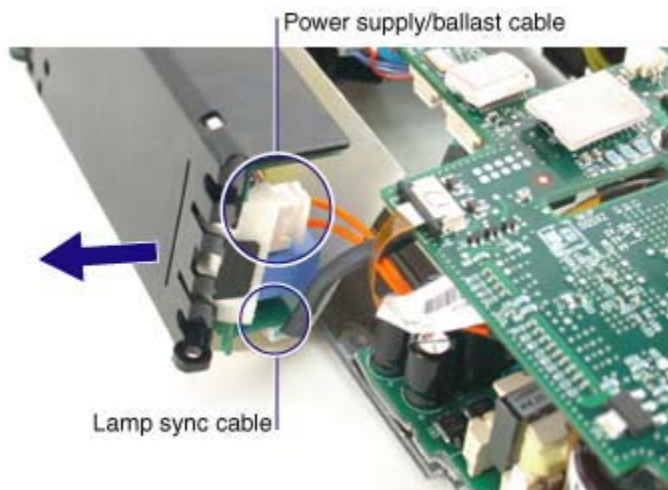
The **front IR receiver** and the **rear IR receiver** accept the IR signals from the remote control. The front IR receiver fastens to the ballast, while the rear IR receiver fastens to the optical engine. Both receivers are included in the **hardware kit (802-0036-xx)**.

Front IR receiver

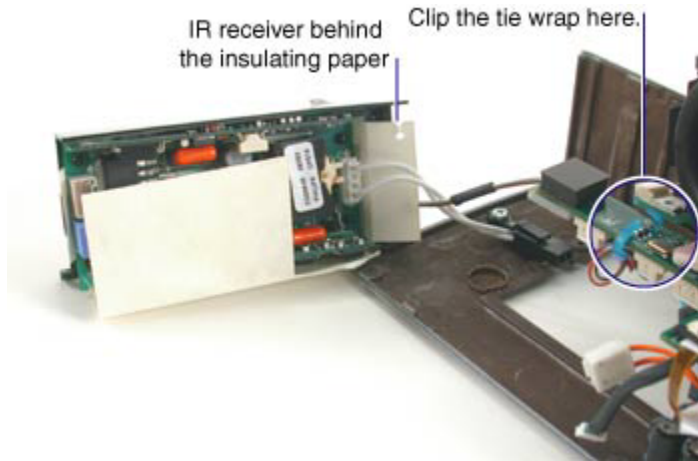
The front IR receiver snaps into place on the outside end of the ballast. The receiver connects to the bottom of the controller ECA. The cable is secured to the controller with tie wrap. While the IR receiver can be removed easily, to access the cable connector and to reinstall the cable require that several parts be removed.



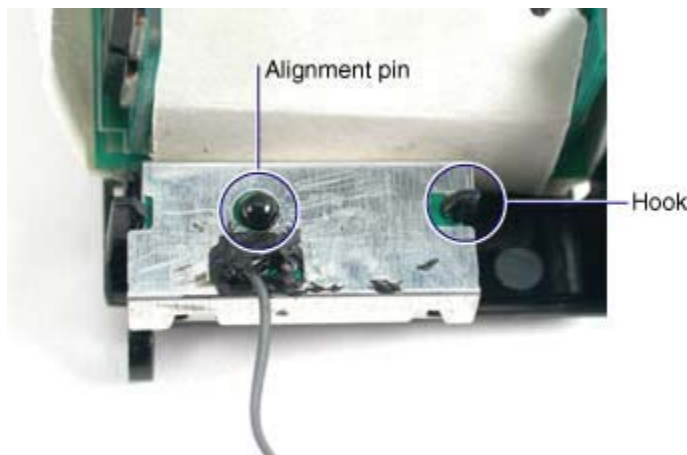
- 1 Remove the following items:
 - Lamp door and lamp (page 25)
 - Zoom tab and focus ring (page 28)
 - Top enclosure and side vent (page 31)
 - Blower assembly (page 40)
- 2 Unplug the power supply/ballast and lamp sync cables from the ballast. Then swing the ballast outward.



- 3 Clip the cable tie that retains the IR and blower assembly cables to the controller ECA. Then unplug the IR cable from the bottom of the controller ECA.



- 4 Place the ballast on the work surface so that the paper insulator faces up.
- 5 To detach the front IR assembly, release a hook that secures the assembly to the plastic ballast protector, then lift it off.



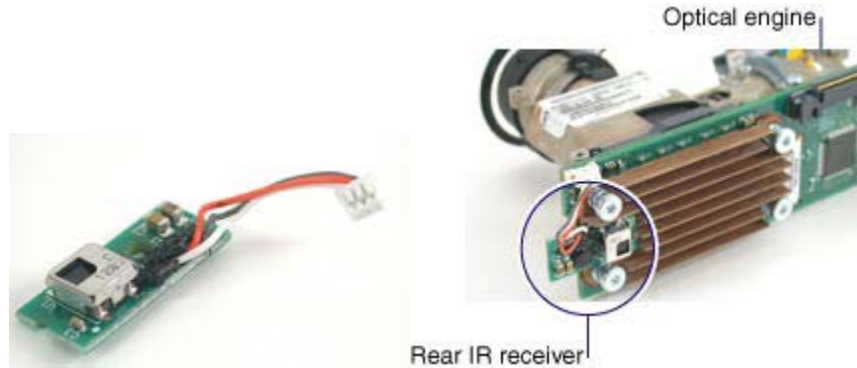
Assembly Note

- ◆ Plug the IR cable into its connector on the controller ECA first. Then bundle the IR and the blower cables and install a new cable tie. It is important that the cables be kept away from the lamp module.

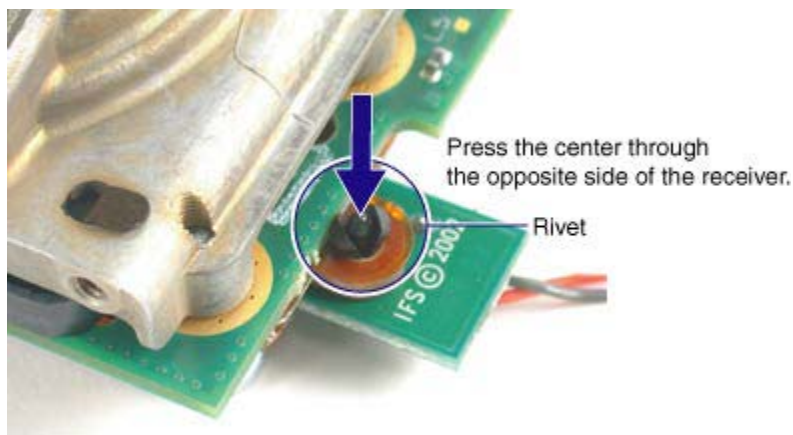
NOTE Fasten the tie wrap so that the joint is on the bottom or the side of the controller. If it is on the top, it will interfere with the top enclosure.

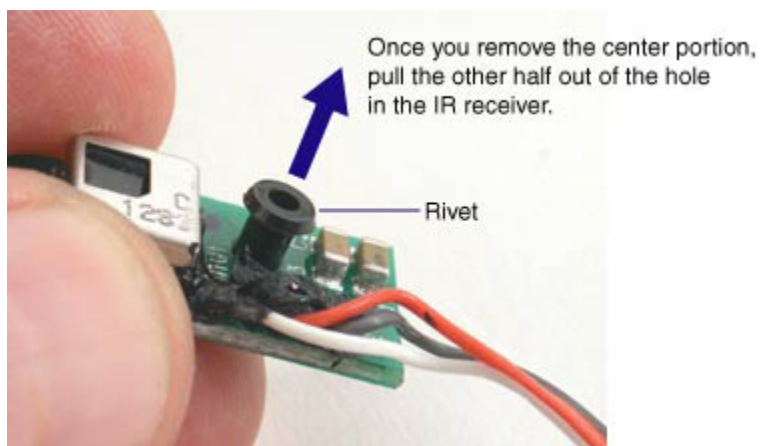
Rear IR receiver

The rear IR receiver fastens to the back of the optical engine. The engine must be removed to access the receiver. A new optical engine includes the rear IR receiver.



- 1 Remove the following items:
 - Lamp door and lamp (page 25)
 - Zoom tab and focus ring (page 28)
 - Top enclosure, side vent and I/O bezel (page 31)
 - Controller ECA (page 43)
 - Optical engine (page 51)
- 2 Unplug the IR cable from the formatter ECA on the optical engine.
- 3 To remove the IR ECA, press the center shaft of the push rivet inward. That allows you to work the rivet out from the top of the ECA.





Assembly Note

- ◆ You can reuse the rivet. Replacements are available in the **Hardware Kit (802-0036-xx)**.

Speaker

The **speaker (526-0145-xx)** fastens to the inside of the bottom enclosure. It is included with a new bottom enclosure, and is available separately as well.

The speaker fits in a plastic speaker mount, which snaps onto the bottom enclosure. To remove the speaker, you slide out the mount and speaker, and then separate the two. The speaker mount is not available separately. It is included in a new bottom enclosure.



1 Remove the following items:

Lamp door and lamp (page 25)

Zoom tab and focus ring (page 28)

Top enclosure, side vent and I/O bezel (page 31)

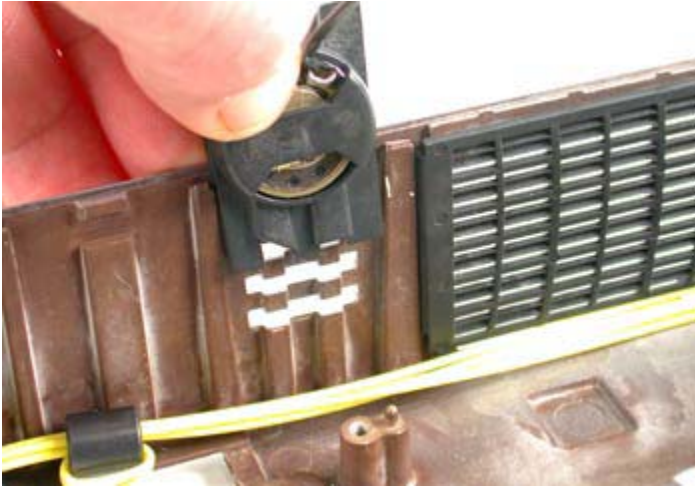
Controller ECA (page 43)

Optical engine (page 51)

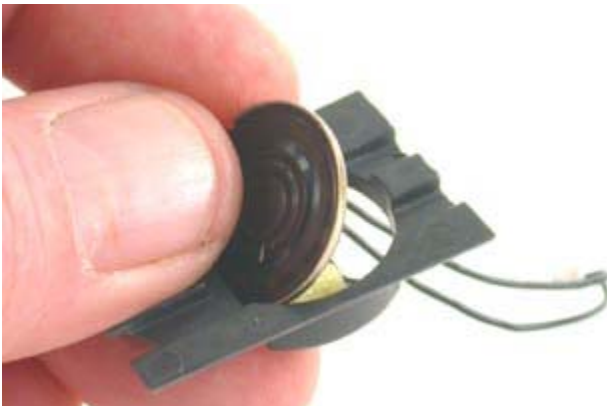
2 Use a pick or a small screwdriver to flex the plastic speaker mount enough to release the mount from its bracket in the bottom enclosure.



- 3 Slide the mount up and out of the enclosure.



- 4 Remove the speaker from the mount.



Assembly Notes

- ◆ Insert the speaker cable through the hole in the top of the mount. Note the orientation in the illustration below.



- Align the outside of the speaker mount with the guides in bottom enclosure. Then slide the speaker mount and speaker into place. The mount should lock into position.

Bottom enclosure

The **bottom enclosure (505-1763-xx)** encloses the bottom half of the projector. When you replace a bottom case, you also need to adhere a new **certification label** to it. The certification label is available in the **Label Kit (802-0035-xx)**.

A new bottom case includes a speaker, the lamp power cable and bracket, two rubber feet, and the elevator assembly. It also includes pre-installed insulators, gap pads and standoffs for the power supply.

1 Remove the following items:

Lamp door and lamp (page 25)

Zoom tab and focus ring (page 28)

Top enclosure, side vent and I/O bezel (page 31)

Controller ECA (page 43)

Optical engine (page 51)

Ballast (page 38)

Blower assembly (page 40)

Power supply (page 54)

2 Remove the serial number label from the certification label on the old bottom enclosure. To do this, carefully use a heat gun or hair drier to soften the adhesive on the back of the label, then peel it off. Do not lose the serial number label. It is not a replaceable part.



Assembly Note

- ◆ Adhere a new certification label to the bottom case. Then adhere the original serial number label in the serial number box.
- ◆ Replace the parts in the bottom case reversing the order you used to remove them.

Performing functional tests

You perform the functional tests after you've repaired the projector to make sure all components of the projector operate properly. You can also perform the functional tests if you're having trouble determining what is wrong with the projector. For additional help in diagnosing trouble with the projector, see **Troubleshooting** on page 5.

Required equipment

| Equipment | Notes |
|--|---|
| Composite video DVD player with S-video capability | Make sure the video player has an S-video Out port and cables. The player should also have a Composite video output port (RCA). Toshiba strongly suggests you use a DVD player to test the video quality. DVD players reproduce colors better and project sharper images. The least preferable is a VCR. If you must use a VCR, make sure you use a commercially produced recording, not one recorded from a broadcast source. The VCR must include an S-video connector in addition to a composite connector. |
| Commercially produced video to test S-video, composite video, and audio. | You'll need the video in DVD, laser disc, or videocassette format. Toshiba strongly suggests you use <i>Video Essentials, Optimizing Your Audio/Video System</i> (DVD International, 1997). |
| Audio & Video cables | Use the AV cable that came with the projector. You also need the optional S-video cable. |
| Computer cables | VESA cable |
| RGB test screens in a PowerPoint presentation | We recommend that you Use the Test Patterns on the Toshiba website to check image quality. |
| PC with digital video and sound card | The sound card should have either a 3.5mm stereo audio jack. The computer must have a CD-ROM and a standard VESA connector for analog output. |
| Remote control | Ensure that the remote has fresh AA batteries. |
| Projection screen | Use a flat screen, not a curved one. |

Before beginning

Make sure the work surface where you perform the functional tests is level and clean. Place the projector on a soft surface (such as an anti-static mat) when running the tests.

Connect the following to the I/O panel on the projector:

- ◆ Video player through the S-video connector.
- ◆ Computer through the M1-A connector

Perform the following tests

| Test | Verification |
|--|---|
| Power Up Connect AC power, and turn the unit on. | Verify that the proper splash (logo) screen appears. If the incorrect logo screen appears, you must install the proper brand system software. The logo screen is automatically installed when you do this. Verify image quality. |
| Cosmetics and mechanicals Adjust the projector so that the image is square. Make sure the lens is at a 90° angle to the wall. | Verify that the elevator and leveling foot are functional. Verify that the focus and zoom rings operate properly. Verify cosmetics. |
| Video source On the keypad , press the Video button display the S-video source. | Verify that the video automatically synchronizes. If it doesn't, press the Video button on the keypad. Verify there is no distortion, noise or other abnormalities. Verify that the audio plays clearly. |
| Audio from video source | Verify that the audio is clear with no distortion. |
| Software Version / Keystone / Reset All <ol style="list-style-type: none">1. Press and hold the Keystone up and Keystone down button on the keypad.2. Press the Menu button, and then navigate to About.3. Navigate to Main > Settings > Service. Select Factory Reset. | Verify that the keystone adjustment works properly. Verify software version in the About box. Verify the keys are not sticky. |

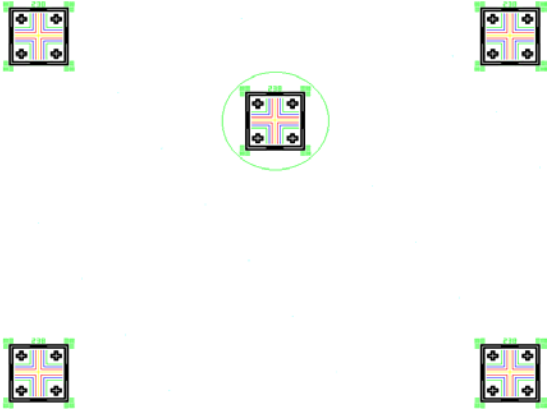
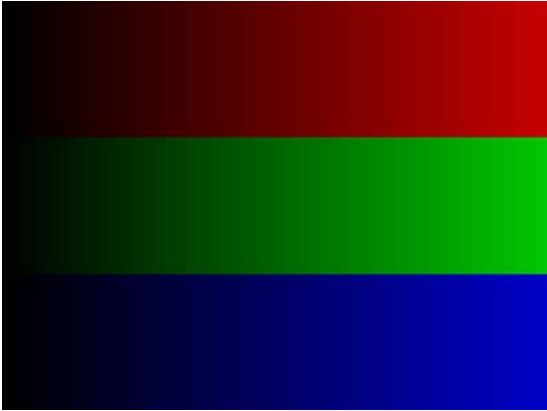
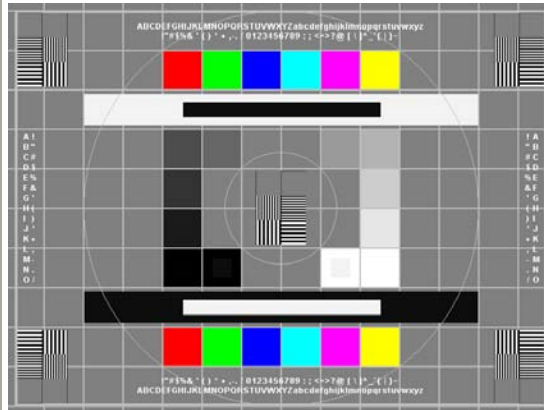
| | |
|--|--|
| <p>The next step is to observe 3 computer images. These will confirm that the computer input works properly, and will test image quality.</p> <p>On the keypad, press the Computer button to select Computer.</p> | |
| <p>Image #1: Focus Test Image</p> <ol style="list-style-type: none"> 1. Turn off any local light. 2. Turn the zoom ring to make the smallest image. 3. Focus the image so the middle icon is clearly focused. 4. Focus the image on the 4 green squares. 5. After focusing on the green squares on the middle icon, turn the zoom ring to make the largest image, and then repeat the focus tests. |  <p>Verify that all four corner icons have clear resolution</p> <p>Verify that the white space is visible on all 5 bar/line icon areas (between green).</p> <p>Verify that the image focuses through the full zoom range.</p> <p>Verify that the image remains in focus when the Image Shift knob is turned.</p> |
| <p>Image #2: Color Ramp</p> <p>Project the Color Ramp image.</p> |  <p>Verify there are no missing parts of the ramp.</p> <p>Verify that the bars are not flashing.</p> <p>Verify that the transitions from light to dark are smooth and gradual.</p> |

Image #4: SMPTE133

Project the SMPTE133 image.



Verify that there are no noise, tint, duplicating columns, or other general image abnormalities present

Power Down

After all tests are complete, turn the power off and disconnect all cables. Attach the lens cap.

Verify unit is powered off before disconnecting cables.


Parts Lists

Illustrated Replaceable Parts List

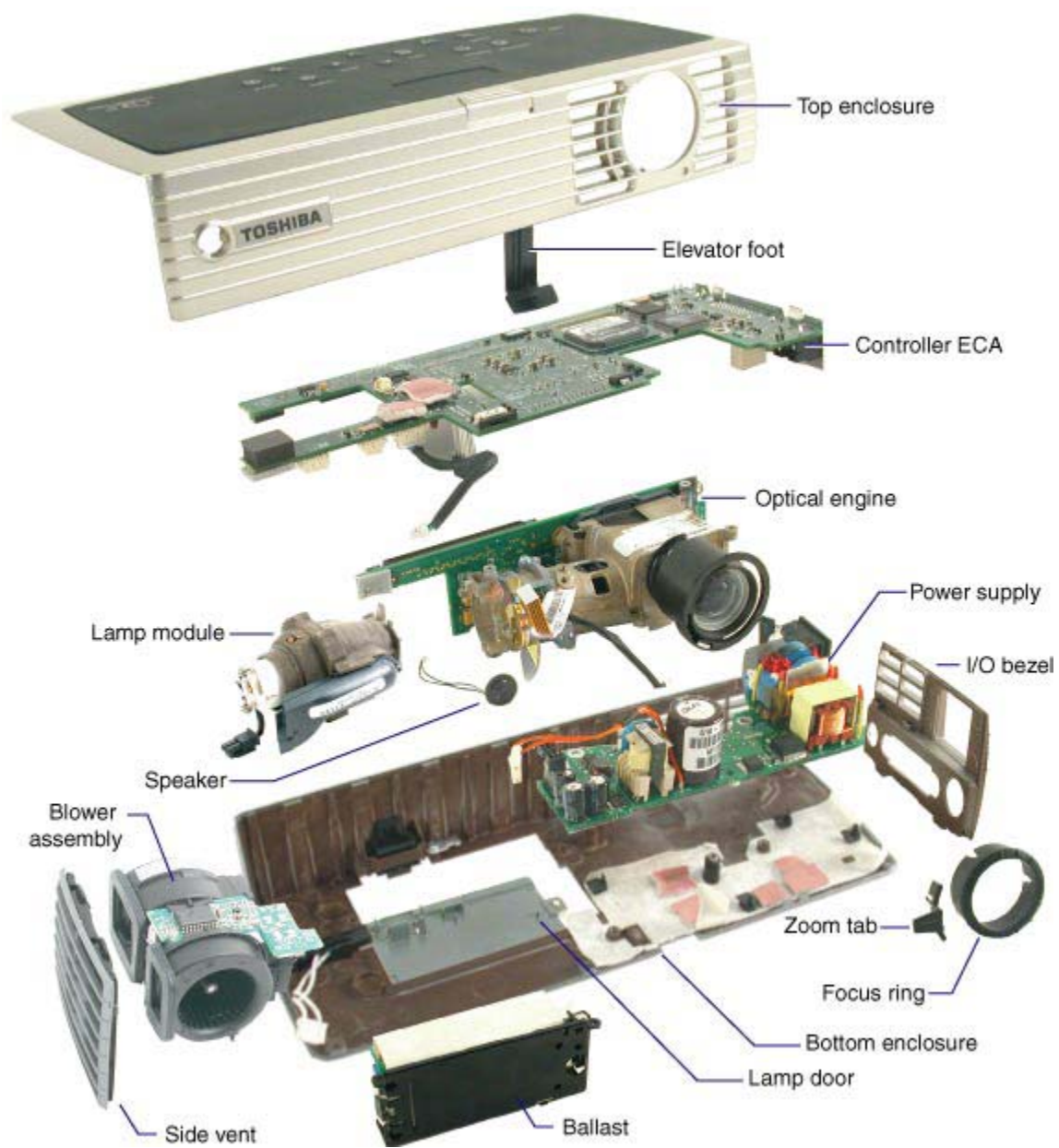
Below is a list of replaceable parts (FRUs) for the TDP-P6. It includes the part name as used in this service guide, as well as the part name as listed in the parts pricing list database. The names often differ. You can click a part name to go to the removal and replacement instructions.

NOTE Before you order a part, make sure that you confirm the correct part number in the online parts list for this product.

| Part | Part name in service guide | Part name in parts pricing list | Part number |
|---|---|--|-------------|
|  | Side vent | S/A, BEZEL, EXHAUST | 505-1294-21 |
|  | Top enclosure | S/A, UPPER ENCLOSURE, W/ MECH., TDP-P6 | 505-1762-xx |
|  | Bottom enclosure | S/A, LOWER ENCLOSURE, W/MECH., TDP-P6 | 505-1763-xx |
|  | I/O bezel (label available in label kit) | S/A, I/O BEZEL, W/ MECH., TDP-P6 | 505-1764-xx |
|  | Ballast | S/A, BALLAST, GECKO, SERVICE FRU | 505-1808-xx |

| Part | Part name in service guide | Part name in parts pricing list | Part number |
|---|----------------------------|---------------------------------|-------------|
|  | Power supply | ECA, P/S, GECKO | 510-1652-xx |
|  | Controller ECA | ECA, GECKO SYSTEM CONTROLLER | 510-1733-xx |
|  | Speaker | S/A, SPEAKER, GECKO | 526-0145-xx |
|  | Blower assembly | S/A, BLOWER, GECKO | 526-0159-xx |
|  | Optical engine | CS PACKAGED ENGINE KIT | 535-0017-xx |
| See Hardware Kit contents (page 73) | Hardware kit | HARDWARE KIT, TDP-P6 | 802-0036-xx |
| See Label Kit contents (page 74) | Label kit | LABEL KIT, TDP-P6 | 802-0035-xx |

Exploded View



Hardware Kit

| Name | Quantity |
|---|----------|
| Blower/controller cable | 5 |
| Lamp door interlock connector | 5 |
| Lamp sync cable | 5 |
| Lamp power cable | 1 |
| Push rivet | 20 |
| Lens cap tether | 10 |
| Black rubber foot | 10 |
| Power supply insulator | 5 |
| Foam damper (fits on top of the controller ECA above the blower gasket) | 10 |
| Blower gasket (between blower ECA and controller ECA) | 10 |
| #4 gap pad | 5 |
| #5 gap pad | 5 |
| Cable tie | 5 |
| Lamp connector bracket | 1 |
| Power supply standoff | 5 |
| Zoom tab lever (black) | 10 |
| Power supply post sleeve | 4 |
| Focus ring (black) | 5 |
| Elevator foot (black) | 5 |
| Rear IR ECA | 5 |
| Front IR ECA | 5 |
| M2x2 T-6 pan machine screw | 10 |
| M2.5x4 T-8 screw | 10 |
| M2.5x6 T-6 black machine screws | 10 |
| M2.5x8 T-6 machine screws | 10 |
| M2.5x5 T-6 machine screws | 10 |

Label Kit

| Label name | Quantity |
|------------------------------|----------|
| TDP-P6 certification label | 5 |
| I/O bezel label | 5 |
| TDP-P6 rear label | 5 |
| TDP-P6 front label | 5 |
| Generic certification label | 5 |
| Plated Toshiba top nameplate | 5 |

T O S H I B A C O R P O R A T I O N
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